2

TAKOMA PARK/SILVER SPRING CAMPUS

2.1 CAMPUS BACKGROUND INFORMATION

2.1.1 Introduction

At the northern edge of Washington, D.C., in the midst of tree-lined streets, Victorian houses and developing urban Silver Sring near the Metro rail system, lies the Takoma Park/Silver Spring Campus. Opened in 1950, it is the oldest of Montgomery College's three campuses.

At the Takoma Park/Silver Spring Campus more than 7,800 students from over 140 different countries take classes in more than 100 disciplines. A wide variety of learning-centered educational offerings are made available in support of the campus commitment to ensure student access, retention and success. Complementing the academic curriculum are the numerous opportunities to gain valuable work experience through internships and volunteer opportunities with many local business and community organization partners.

2.1.2 Institutional Characteristics

The Takoma Park/Silver Spring Campus has the second largest enrollment of the College's three campuses, but only slightly larger than that of Germantown. Takoma Park/Silver Spring is the most urban of the three campuses. The relatively small size and compactness of the Campus enhances the quality of its academic life and promotes a cohesiveness and sense of identity difficult to match on most college campuses.

The Takoma Park/Silver Spring Campus is racially diverse with nonwhites comprising 70.8% of the student body. The mean age of a Campus student is 26.1 years with traditional age students (18-20 years of age) still leading all age groups by comprising 30.2% of the total student body. Approximately 79% of all students reside in Montgomery County, which is the lowest percentage of the three College campuses. In addition, the Campus has the highest percentage of female enrollment at 58.3% as compared to Germantown and Rockville. Figures 2.01 and 2.02 provide an overview and snapshot of the Campus student body as it relates to Enrollment Status and Day and Evening Students.

FIGURE 2.01
TP/SS CAMPUS ENROLLMENT STATUS, FALL 2013

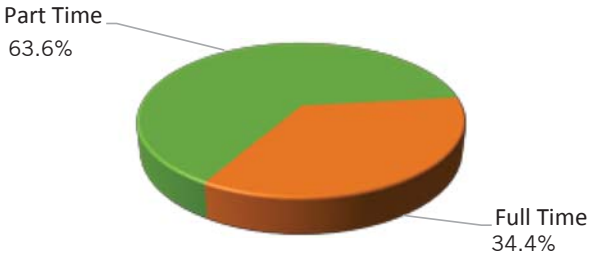
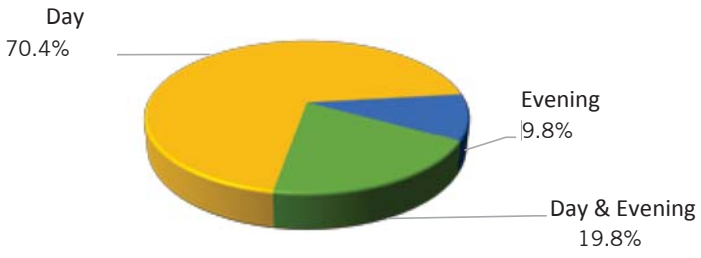


FIGURE 2.02
TP/SS CAMPUS DAY AND EVENING STUDENTS, FALL 2013



The Campus' intercollegiate athletic program co-sponsors teams in men's and women's basketball with the Rockville Campus. Campus-based central administration and student support services include the library, information technology, admissions and registration, financial aid, cashiering, physical plant, and auxiliary services, book store, and food services.

The Campus is also dedicated to sustainability and resource conservation and has integrated many of these principles into its daily activities and academic programs. The rooftop solar arrays on two of the newer buildings are a visible example of the College's commitment to renewable energy and sustainability along with the requirement for designing and constructing all new capital building projects to achieve a minimum of LEED Silver certification.

The Takoma Park/Silver Spring Campus, apart from its unique physical setting, distinguishes itself as being the College's focus for programs related to the health sciences. The Health Sciences Center (HC), opened in January 2004, supports the Health Sciences, the Health Sciences Institute of Workforce Development & Continuing Education, and the College's partnership with Holy Cross Germantown Hospital. The building includes a functioning health clinic, allowing students to work in the clinic as part of their rotations, thereby gaining much needed practical experience. Holy Cross Germantown Hospital personnel serve as clinical adjunct faculty, working with faculty in supervising and evaluating students. Concomitantly, as part of their assignments, faculty spend time in the clinic, thus maintaining currency in their respective disciplines and current clinical practices.

The Campus has also expanded its program offerings in the Visual, Performing, and Communication Arts through the offering of the Associate of Fine Arts degree and the program expansions associated with the Morris and Gwendolyn Cafritz Foundation Arts Center (CF) and the Cultural Arts Center (CU).

This Campus is home to the College's only planetarium, offering astronomical and planetarium shows to College and community constituencies. The 42-seat planetarium has the capacity to project 1,834 naked-eye stars, the Milky Way, and five naked-eye planets—Mercury, Venus, Mars, Jupiter, and Saturn—under a 24-foot dome. A new star projector and seating have been purchased to replace the original equipment and furniture and will be implemented in early 2016. The new equipment will provide upgraded projection capabilities and will add greater flexibility for use of the space.

2.1.3 Comparison with 2006-16 FMP

The 2006-16 Facilities Master Plan described a projected space deficit in 2016 of 152,967 NASF, and proposed to meet that deficit by construction of two new buildings and renovation of three buildings. New projects consisted of a new Science and Math Center and a new Student Resource Center + Library. Renovations were proposed for Pavilion Three (P3), Pavilion Four (P4) and the Catherine F. Scott Commons. All the proposed new buildings and renovations were proposed for the Takoma Park side of campus. Due to the restricted nature of the campus, the new buildings were proposed to be built in the same general area as the existing buildings. This required either phased construction or loss of program space during construction, or both.

The new Science and Math Center was proposed to be built in two phases, with demolition of Science South Building (SS) and construction of a four-story building in the first phase, and then demolition of Science North Building (SN) and construction of a three-story building in the second phase. Proposed construction of the new Student Resource Center + Library in the same general area as the existing building meant that the program space would have to be accommodated elsewhere for the construction duration, either on campus or off campus.

Since the 2006-16 Facilities Master Plan was approved, several projects have been completed or are in progress

at the Takoma Park/Silver Spring campus. These include renovations of the Catherine F. Scott Commons, Pavilion Three and Pavilion Four.

This 2013-23 Facilities Master Plan describes a similar projected space deficit in 2023 of 163,318 NASF. The space deficit is proposed to be met by construction of four new buildings and renovation of one building. Proposed new construction includes a new Math and Science Center Building, a new Library Learning Commons, a new Health and Fitness Center and a new Math Building. Pavilion One (P1) and Pavilion Two (P2) are proposed to be renovated.

Like in the 2006-16 Facilities Master Plan, all the new construction and renovation projects are located on the Takoma Park side of campus. Unlike the 2006-16 Facilities Master Plan however, the new Math and Science Center Building, which is the first building in the queue, is proposed to be built in one phase as a three-story building. This allows the math and science programs to continue functioning on campus while the new building is under construction, and significantly shortens the construction duration as well as the construction cost of the project. Similarly, the new Library Learning Commons is proposed to be built adjacent to the existing Resource Center (RC), allowing that program to continue functioning during construction. A new Health and Fitness Center is necessitated by removal of Falcon Hall (FH) for construction of the new Math and Science Center Building, and a new Math Building is proposed to house programs that are not accommodated in the new Math and Science Center Building, along with general purpose instruction and office space to support a variety of academic programs.

2.1.4 Academic Programs

Montgomery College is authorized by the Maryland Higher Education Commission to offer five degrees: the Associate of Arts (A.A.), the Associate of Science (A.S.), the Associate of Arts in Teaching (A.A.T.), the Associate of Fine Arts (A.F.A.) for students wanting to transfer to baccalaureate programs and the Associate of Applied Science (A.A.S.) for those seeking immediate employment. The College also awards certificates (Cert) that focus on the development of technical skills, as well as letters of recognition (L of R) for non degree seeking students who satisfactorily complete certain courses that teach focused skills and competencies.

In addition to General Education, student development, honors, cooperative education, and women's studies courses, the Takoma Park/Silver Spring Campus offers fifty-eight (58) different degree programs, seventeen (17) certificate programs, and eight (8) letter of recognition programs. Academic programs uniquely offered at the Takoma Park/Silver Spring Campus are related to programs in the health sciences including the A.A.S degree in Diagnostic Medical Sonography, the A.A.S degree and certificate in Health Information Management, the A.A.S. degree in Mental Health, the A.S degree in Nursing, the A.A.S. degree in Physical Therapy Assistant, the A.A.S. degree in Radiologic Technology, and the A.A.S. degree in Surgical Technology. In addition, the A.F.A. degree programs in Graphic Design and Studio Art and the A.A.S. degree and certificate programs in Diagnostic Medical Sonography are approved as State wide programs. These State wide programs are available to students from other geographic areas where the local community college does not offer the same program. All of the health programs have also been identified as health manpower shortage programs and have been offered to all Maryland residents at in-county tuition rates.

The College's Cooperative Education Program also finds its home on the Takoma Park/Silver Spring Campus. Serving all Montgomery College students and the County and area's business community, this program matches meaningful work and career experiences with student academic interests and goals. Not included here are the programs offered by Workforce Development & Continuing Education.

TABLE 2.01
TP/SS CAMPUS ACADEMIC PROGRAMS (By Credential and Campus), 2015 - 2106

Program Area	AA	AS	AAT	AFA	AAS	Cert	L of R
Accounting						1GR	
American Sign Language	1R					1R	
Applied Geography					1R	2R	
Architectural & Construction Tech					2R	1R	1R
Art	2GRT			1GRT			
Automotive Technology					1R	4R	
Biotechnology					1G	2G	
Broadcast Media Production					2R	4R	
Building Trades Technology					3R	4R	4R
Business	1GRT						
Communication Studies	1GRT						
Computer Application					2GRT	2GRT	
Computer Gaming & Simulation	3 GRT						
Comp Publishing & Printing Mgmt							1GRT
Computer Science & Technologies	2GRT					1GRT	
Criminal Justice					1R		
Cybersecurity					1G	2G	
Diagnostic Medical Sonography					1T		
Digital Media and Web Technology					1GRT		
Education			7GRT		1R	1GRT	
Emergency Preparedness Management		1RT				1RT	
Engineering Science					12GRT		
Ethnic Social Studies						1GRT	1GRT
Fire Science & Emergency Services					3RT	4R/1T	1RT
General Studies	4GRT						
Graphic Design	4R/2GT			1GRT		3R/2GT	
Health Enhancement, Ex Sci & PE	3R					1R	2R/1GT
Health Information Management					1T		1T
Hospitality Management					3R	3R	3R
Interior Design	1R				2R	3R	
International Studies	1GRT						
Landscape Technology					1G	1G	
Management						1GRT	1GRT
Mental Health Associate					1T		
Music	1R					1R	
Network & Wireless Technologies					1GRT	3G	
Nursing		1T					

Paralegal Studies					1GT	1GT	1GT
Photography					1R	4R	1GRT
Physical Therapist Assistant					1T		
Polysomnography						1T	
Radiologic (X-Ray) Technology					1T		
Science		5GRT					
Surgical Technology					1T		
Technical Writing						1G	
Theatre	3R						
Transfer Studies						1GRT	
Web Careers						5R/3GT	
Women's Studies						1GRT	

Degrees, Certificates, and Letters of Recognition: AA-Associates of Arts; AS-Associate of Science; AAS-Associates of Applied Science; AAT-Associates of Arts in Teaching; AFA-Associate of Fine Arts; Cert-Certificate; and L of R-Letter of Recognition.

Campus: T-Takoma Park/Silver Spring Campus; R-Rockville Campus; and G-Germantown Campus.

Source: Montgomery College

TABLE 2.02
TP/SS CAMPUS DAY CREDIT AND CONTACT HOURS, FALL 2013 AND 2023

Day, On-Line, and Total Credit Hours

	2013 Day SCH	2013 On-Line SCH	2013 Total SCH	2013 % Day SCH	2013 % On-Line SCH	2023 Day SCH	10 yr % Chg	2023 On-Line SCH	10 yr % Chg	2023 Total SCH	10 yr % Chg	2023 % Day SCH	2023 % On-Line SCH
TP/SS	37,514	3,372	40,886	92%	8%	48,393	29%	4,350	29%	52,743	29%	92%	8%
Collegewide	167,123	11,465	178,588	94%	6%	210,241	26%	14,423	26%	224,664	26%	94%	6%

Day Contact Hour (WSCH) to Day Credit Hour (SCH) Ratio

	2013 WSCH	2013 SCH	2013 WSCH / SCH	2023 WSCH	10 yr % Chg	2023 SCH	10 yr % Chg	2023 WSCH / SCH	10 yr % Chg				
TP/SS	60,375	40,886	1.48	75,310	25%	52,743	29%	1.43	-3%				
Collegewide	260,704	178,588	1.46	314,515	21%	224,664	26%	1.40	-4%				

Day Lecture and Lab Contact Hour

	2013 Day Lecture WSCH	2013 Day Lab WSCH	2013 Day Total WSCH	2013 Day % Lab WSCH	2023 Day Lecture WSCH	10 yr % Chg	2023 Day Lab WSCH	10 yr % Chg	2023 Day Total WSCH	10 yr % Chg	2023 Day % Lab WSCH		
TP/SS	38,419	21,956	60,375	36%	48,370	26%	26,940	23%	75,310	25%	36%		
Collegewide	161,296	99,408	260,704	38%	192,569	19%	121,946	23%	314,515	21%	39%		

Source: Montgomery College

Educational programs at Takoma Park/Silver Spring are expected to generate 52,743 scheduled credit hours (SCH) in 2023, an increase of 29% over fall 2013 and with 92% being taught during the day. Delivery of Campus programs is expected to change over the next decade. Distance learning alternatives will be more available as options, including both entire and partial course delivery. However, the percentage of SCH taught entirely on-line at the Campus is projected to remain stable at 8% over the ten year planning period. Table 2.02 provides a summary of contact and credit hours for the Campus and the College for 2013 and 2023 and Table 2.03 provides a summary of credit hours by division from 2010-2013 and projected for 2023.

The College has also made significant and substantial investments in its classroom environments to incorporate smart instructional technology and to provide and support technology-based learning centers. In addition to these improvements, the College must also prepare to address other changes in pedagogy, including increased instructional use of specialized learning environments and the development of instructional space that is configured and equipped to support collaborative and group based learning.

2.1.5 Enrollment Projections

Over the past five-year period, headcount enrollment has increased by 18%, from 6,586 students in 2008 to 7,755 in 2013. The rate of enrollment growth over the next decade is expected to increase by 27% resulting in a projected headcount of 9,820 students at the Campus by 2023. Commensurate with headcount growth during this period will be an increase in scheduled credit hours (SCH) as discussed in the previous section. Table 2.04 provides a summary of the historical, current and projected headcount and the corresponding Full Time Equivalent (FTE) student calculation for the Campus.

2.1.6 Faculty and Staff

During the 2013 to 2023 planning period the Takoma Park/Silver Spring Campus is projected to increase faculty employees by 24 FTE, which equates to a 12% growth. This increase will be comprised of a 9% increase in full-time faculty or a total of 12 headcount and an 18% increase in part-time faculty for a total of 48 headcount. The planned part-time faculty growth will continue to add to the existing space deficit in office and conference space for part-time faculty, if not addressed. Table 2.05 provides a summary of current and projected faculty by division for 2013 and 2023.

The Takoma Park/Silver Spring Campus is anticipating a modest increase in full-time and part-time staff through 2023.In total, the number of Campus staff is expected to increase by 9 FTE positions, which represents a 3% increase. Table 2.06 provides a summary of current and projected staff for 2013 and 2023.

TABLE 2.03
TP/SS CAMPUS CREDIT HOURS BY DIVISION, FALL 2010-2013 AND 2023

	2010	2011	2012	2013	5yr % Chg	2023	10 yr % Chg
Student Dev	711	734	715	616	-13%	795	29%
Honors/Other	22	28	33	28	27%	36	29%
AHSS	27,659	28,451	30,295	28,577	3%	36,864	29%
Health Sciences	6,871	7,454	7,124	7,442	8%	9,600	29%
NASBMIS	19,858	19,915	20,469	20,523	3%	26,475	29%
TP/SS	55,121	56,582	58,636	57,186	4%	73,770	29%

Source: Montgomery College

TABLE 2.04
TP/SS CAMPUS ENROLLMENT STATISTICS FALL 2008-2013 AND 2023

	2008	2009	2010	2011	2012	2013	5yr % Chg	2023	10yr % Chg
Headcount	6,586	7,145	7,207	7,449	7,819	7,755	18%	9,820	27%
FTE Students	3,242	3,526	3,663	3,767	3,909	4,487	38%	5,910	32%

Source: Montgomery College

TABLE 2.05
TP/SS CAMPUS FACULTY POSITIONS BY DIVISION, 2013 AND 2023

	2013 FT	2013 PT	2013 FTE	2023 FT	10 Yr # % Chg	2023 PT	10 Yr # % Chg	2023 FTE	10 Yr # % Chg
Student Dev	0	16	4	0	0	19	3	5	1
					0%		19%		19%
AHSS	51	137	85	55	4	162	25	96	10
					8%		18%		12%
Health Sciences	48	36	57	52	4	42	6	63	6
					8%		17%		10%
NASBMIS	38	78	58	42	4	92	14	65	8
					11%		18%		13%
TP/SS	137	267	204	149	12	315	48	228	24
					9%		18%		12%

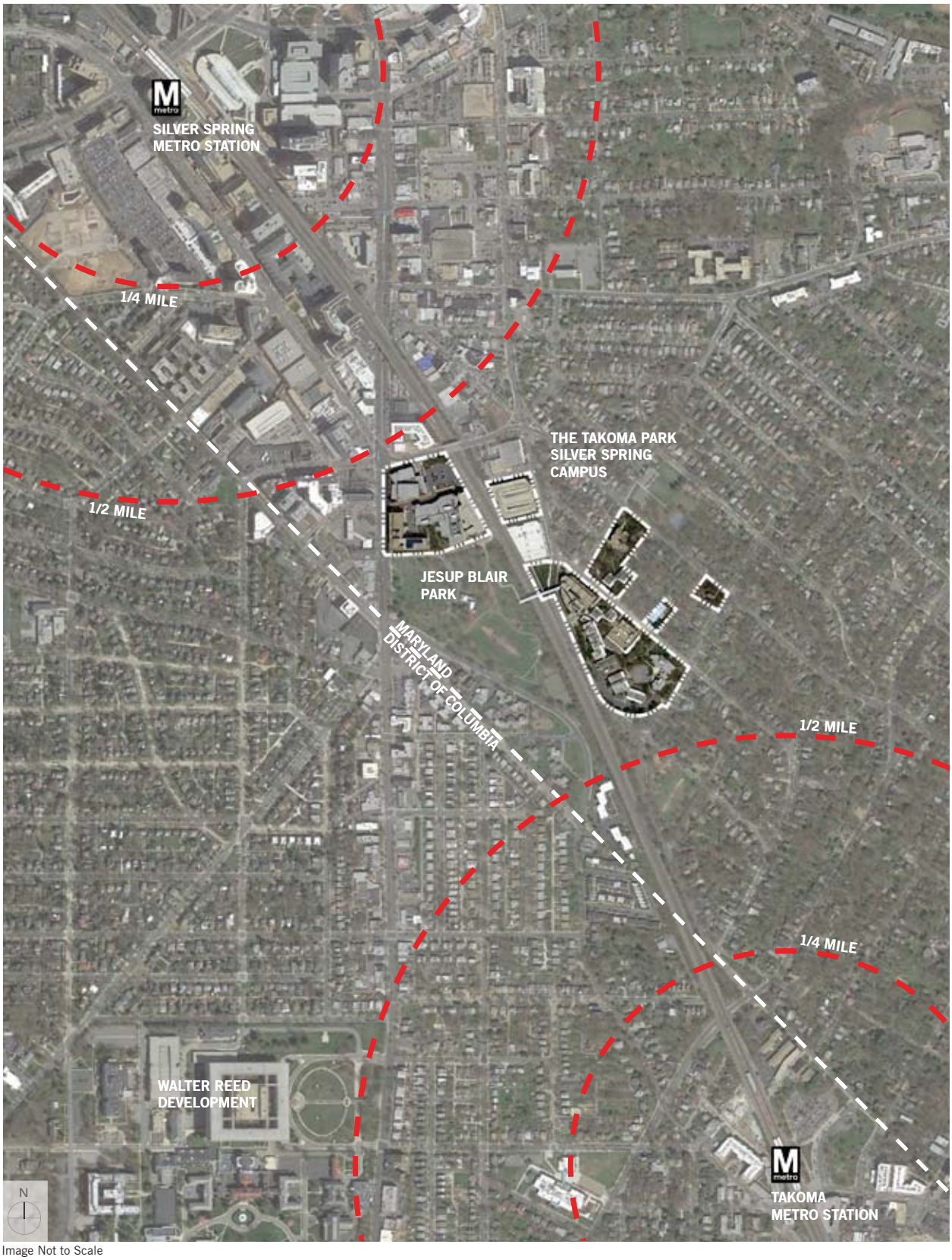
Source: Montgomery College

TABLE 2.06
TP/SS CAMPUS STAFF POSITIONS, 2013 AND 2023

	2013 FT	**2013 PT**	**2013 FTE**	**2023 FT**	**10 Yr # % Chg**	**2023 PT**	**10 Yr # % Chg**	**2023 FTE**	**10 Yr # % Chg**
Administrative	11	0	11	13	2	0	0	13	0
					18%		0%		0%
Other Professional	54	8	56	56	2	10	2	59	3
					4%		25%		4%
Clerical and Secretarial	49	11	52	51	2	13	2	54	3
					4%		18%		6%
Technical and Paraprofessional	57	11	60	60	3	13	2	63	3
					5%		18%		5%
Skilled Crafts	18	0	18	19	1	0	0	19	0
					6%		0%		0%
Service and Maintenance	68	0	68	71	3	0	0	71	0
					4%		0%		0%
TP/SS	257	30	265	270	13	36	6	279	9
					5%		20%		3%

Source: Montgomery College

FIGURE 2.03 CAMPUS CONTEXT



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2.2 EXISTING SITE CONDITIONS and ANALYSIS

2.2.1 Context and Setting

Context

The Takoma Park/Silver Spring Campus is located in the southeastern corner of Montgomery County. It is on the edge of the Washington DC streetcar suburb of Takoma Park and the quickly urbanizing Georgia Avenue corridor, south of downtown Silver Spring. The Campus straddles both sides of the WMATA/CSX tracks and is located about equidistant from two Metro stations, Silver Spring and Takoma Park. Of all the Montgomery College campuses, Takoma Park/Silver Spring is the most compact and urban in character.

The original Campus location was between Fenton and Philadelphia Streets and dates to the 1950s. Most of the buildings within the area of the original Campus, with the exception of Science South Building, were built in the late 1970s. Several buildings are located across New York Avenue within an existing residential neighborhood of early twentieth century homes. This area is referred to as Block 69.

The last ten years has seen an expansion of the Campus to the north and west of the WMATA/CSX tracks, within the Silver Spring commercial corridor. These Campus buildings adjacent to Georgia Avenue are surrounded by a rapidly changing landscape, from car-oriented uses to more dense and urban mid-rise development. (See Figure 2.03 Campus Context and Figure 2.04 Campus Setting).

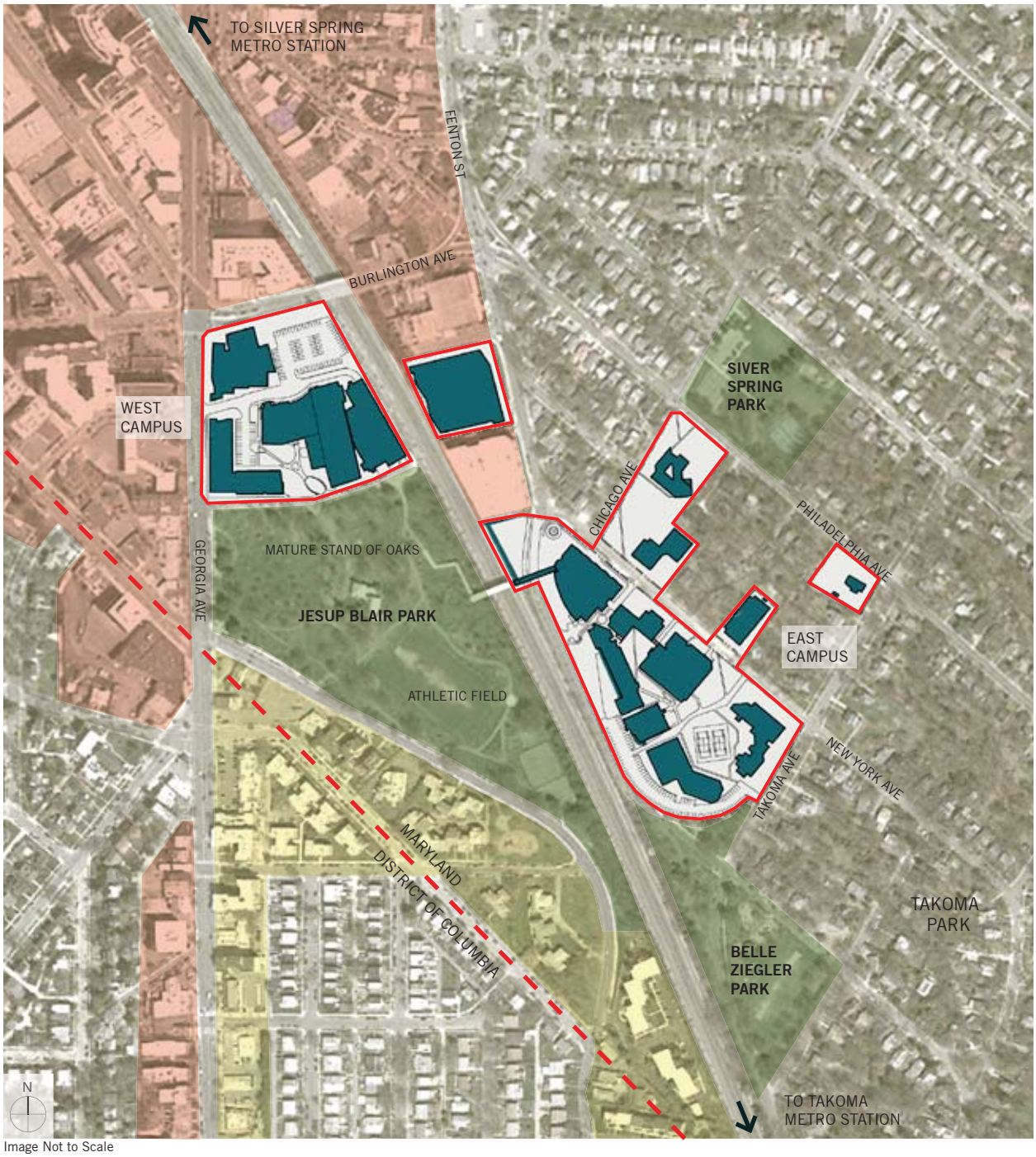
Setting

The Silver Spring (west) and Takoma Park (east) sides of this Campus have a very different identity and character due to their distinctive settings. The Silver Spring side is distinctly urban and the type of development in the surrounding neighborhood is primarily commercial with some older light industrial development. Just south of the Campus property is Jesup Blair Park, characterized by mostly green open space, playing fields, tennis courts and mature trees. The Silver Spring side of Campus itself is a compact collection of buildings ranging in height from three to four stories. These structures are newer, constructed primarily between 2004 and 2009, except for the original portions of the Morris and Gwendolyn Cafritz Foundation Art Center (CF), which began its life as a bakery. Campus buildings located on the Silver Spring side include the two newest buildings – the Cultural Arts Center (CU) and the West Garage (WG), plus the Health Sciences Center (HC) and Morris and Gwendolyn Cafritz Foundation Arts Center. Open space on this west side of the Campus is limited to hardscape plazas and newly planted small-scale landscape areas.

The Takoma Park side of Campus is set in the midst of a single-family residential neighborhood consisting of relatively small gable roof houses. The original Campus buildings, designed in the early 1970s by renowned architecture firm Skidmore Owings and Merrill, are small in scale and pavilion-like in character, with open "corridors" and steep sloped roofs. While their size and scale is likely a response to the residential neighborhood surrounding the Campus, their openness is not suited for the local climate and their small footprints and odd shapes make them very inefficient buildings for academic use.

The original cluster of buildings between New York Avenue and Fenton Street on the Takoma Park side of Campus includes the Mathematics Pavilion (MP), North Pavilion (NP), Science North and South buildings, and the Resource Center (RC), all designed and built in the mid-1970s. Across New York Avenue on a parcel known as Block 69 are two more buildings, from this period - Pavilions One and Two (P1 and P2) (connected) and Pavilion Three (P3.) The original cluster was expanded by two larger buildings in the late 1970s-early 1980s - the Catherine F. Scott Commons and Falcon Hall, and Pavilion Four was built in the same period at the far end of Block 69. In 1980, the East Parking Garage was built on a parcel that is close to, but non-contiguous to the Campus. The newest and largest building on the Takoma Park side of Campus is the Charlene R. Nunley Student Services Center (ST), built in the mid 2000s.

FIGURE 2.04 CAMPUS SETTING



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- EXISTING CAMPUS BUILDINGS
- UNDER DESIGN OR CONSTRUCTION
- PARK
- SINGLE-FAMILY RESIDENTIAL
- MULTI-FAMILY RESIDENTIAL
- COMMERCIAL / INDUSTRIAL

Landscaped courtyards and walkways separate the original cluster of buildings between Fenton Street and New York Avenue from one another and the buildings are set back from the neighborhood streets with a tree buffer. Landscaping on Block 69 includes a few trees but is mostly lawn.

The primary physical link between the Silver Spring and Takoma Park sides of Campus is a pedestrian bridge that crosses over Fenton Street and the WMATA/CSX tracks. The bridge rises from Jesup Blair Park in Silver Spring and lands in a small landscaped area on the Takoma Park side and bridges across the street to the Charlene R. Nunley Student Services Center.

As the facilities on the two sides of Campus have developed along different trajectories, the academic program has evolved with distinction as well. The Takoma Park side of Campus has focused on the natural and physical sciences, humanities and student services, while the Silver Spring side of Campus has focused on the strong health sciences and the visual and performing arts programs.

2.2.2 Gateways and Views

With the "split personality" of this Campus, gateways are especially important to help define the Campus boundaries and establish the College identity and presence within the community setting. The original cluster of buildings on the Takoma Park side has traditionally had little visibility from the surrounding neighborhood - the buildings are small and are oriented away from the street. Campus gateway signage is small and sized in keeping with the neighborhood scale.

The newer, larger buildings have created a new gateway experience, increasing visibility and invoking a previously unseen level of change and energy on the Campus. The Charlene R. Nunley Student Services Center (ST) on the Takoma Park side has a strong presence on Fenton Street with its circular corner plaza and cylindrical corner element. The Cultural Arts Center on the Silver Spring side of Campus has a prominent location at the corner on George Avenue. It not only functions as a gateway building seen from both directions of Georgia Avenue, but College signage is prominently displayed on its façade and in electronic signage at the corner, giving the Campus additional presence within its setting.

The College has been studying design proposals for gateway signage at all its campuses, and has plans for installing new and upgraded signage in three locations on the Takoma Park side of the TP/SS Campus. (See Figure 2.05 for TP/SS Gateway Signage Locations). Gateway signage should also be considered in additional locations to help identify and anchor the non-contiguous Campus boundaries.

Viewsheds to Campus from its surroundings are a vital part of establishing the Campus presence in its community. Beyond the three locations identified for Campus gateway signage, the opportunity exists for creating a strong southern viewshed to Campus from just north of the intersection of Burlington Avenue and Fenton Street. The view currently is directed toward the East Garage, but good signage or property acquisition along Burlington Avenue near the intersection of Fenton Street could increase the Campus presence from the north. Another important viewshed exists from near the Charlene R. Nunley Student Services Center and the original building cluster on the Takoma Park side of Campus directly into Block 69. This view currently focuses on Pavilion Four and some trees, but could be enhanced with landscape and open space development in that area. Within the original building cluster between Fenton Street and New York Avenue, limited views exist between courtyards. These should be maintained and even expanded with new development (See Figure 2.05 Gateways and Views).

FIGURE 2.05 GATEWAYS AND VIEWS

EXISTING CAMPUS BUILDINGS

CAMPUS GATEWAYS

CAMPUS VIEWS

GATEWAY SIGNAGE

CF	The Morris and Gwendolyn Cafritz Foundation Arts Center
CM	Catherine F. Scott Commons
CU	Cultural Arts Center
DC	Child Care Center
EG	East Garage (parking)
FH	Falcon Hall (Physical Education)
HC	Health Sciences Center
MP	Mathematics Pavilion
NP	North Pavilion
P1	Pavilion One
P2	Pavilion Two
P3	Pavilion Three
P4	Pavilion Four
RC	Resource Center
SN	Science North Building
SS	Science South Building
ST	Charlene R. Nunley Student Services Center
WG	West Garage (parking)

2.2.3 Open Space and Streetscape

The original Takoma Park Campus (east side) was organized around a series of small and irregular courtyards that stepped down with the topography from the north end of Campus to the south end. Entrances to buildings were typically off these courtyards. This organization allowed for the creation of outdoor spaces for mingling of students, to connect buildings with indirect relationships to each other, and to reduce the impact of student traffic on the adjacent residential neighborhood. The concrete walls and fence of the tennis courts have reduced the visual connection to the southernmost courtyard. The Miller Memorial Garden occupies a small space in the middle of the Campus and is a key part of the historical legacy of the College.

The hardscape plaza outside the Charlene R. Nunley Student Services Center and the hardscape plaza across the street at the bottom of the pedestrian bridge in combination offer an opportunity for better programmed open space at this critical juncture of Campus. The Takoma Park side of the pedestrian bridge lands at this plaza, which also accommodates a heavily used Capital Bike Share station.

The green open space at the corner of New York Avenue and Chicago Avenue, on Block 69, is the largest open space available on the Campus and has potential to become more activated and better used if improved.

The Silver Spring (west) side of Campus has a very different organization and relationship of buildings and open space. Due to their large size and specialization, the buildings are not linked around courtyards as on the original Campus and are typically entered directly from the street. The only significant open space is between the Morris and Gwendolyn Cafritz Foundation Arts Center and the Health Sciences Center. This space is a pleasant hard paved, landscaped plaza.

Though not technically a part of Campus, Jesup Blair Park plays an active role in providing open space for the Campus. Students and faculty interact with it each time they cross over the pedestrian bridge, walking through a corner of the park under an oak tree canopy; the pedestrian traffic helps to activate the park as well. (See Figure 2.06 Open Space and Streetscape).

2.2.4 Pedestrian and Bicycle Circulation

Pedestrian Circulation

The Campus is compact enough to encourage walking from one end to the other. Most pedestrian circulation occurs on the Campus proper and not along neighborhood streets, with the exception of Fenton Street south of the East Parking Garage. The WMATA/CSX railroad tracks splits the Campus, creating a significant barrier to cross-campus pedestrian circulation. The pedestrian bridge spanning the tracks from the Charlene R. Nunley Student Services Center to Jesup Blair Park creates the link between the east and west sides of the Campus. Pedestrians also circulate along Burlington Avenue which bridges over the WMATA/CSX tracks, making the properties along Burlington Avenue prime opportunities for stronger connectivity between the two sides of the Campus. An additional pedestrian bridge linking the Campus' two garages and both sides of King Street would facilitate internal connections between the two sides of the Campus but would need to be monitored for safety.

The most problematic pedestrian/vehicular conflicts on the east campus occur at the intersections of both Fenton Street and Chicago Avenue with New York Avenue. Pedestrian paths on the Takoma Park side of Campus could be better defined, in particular as they relate to the open courtyards on this side of Campus. On the west campus, conflicts can occur at Georgia Avenue intersections and the unsignalized crossing at King Street and Jesup Blair Street.

Pedestrian safety is also a concern at King Street. King Street is paved with brick pavers, well lit, contains bike

FIGURE 2.06 OPEN SPACE AND STREETSCAPE

ACTIVATED OPEN SPACE WITH SEATING AND PEDESTRIAN AMENITIES

RESIDUAL OPEN SPACE CREATED BY BUILDING SETBACKS

EXISTING CAMPUS BUILDINGS

STREETSCAPES WITH PLEASANT RESIDENTIAL AND PEDESTRIAN CHARACTER

CF	The Morris and Gwendolyn Cafritz Foundation Arts Center
CM	Catherine F. Scott Commons
CU	Cultural Arts Center
DC	Child Care Center
EG	East Garage (parking)
FH	Falcon Hall (Physical Education)
HC	Health Sciences Center
MP	Mathematics Pavilion
NP	North Pavilion
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P2	Pavilion Two
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WG	West Garage (parking)

racks and is lined with trees, all of which imply that it is a pedestrian zone. However, the pedestrian/vehicular conflicts occur because King Street is also the entry and drop off point for the Montgomery College Shuttle and a main point of access for the West Garage (WG). Additionally, a primary connection between King Street and Jessup Blair Park is through the drive aisle under the West Garage and parallel to the WMATA/CSX right-of-way. This path is lined with Help Phones, but it is not a defensible space and has generated safety concerns in the past.

Figure 2.07 highlights the pedestrian routes on the Campus and the building entries. The plan also references 1/8 and 1/4 mile walking radii from the lobby of the Charlene R. Nunley Student Services Center corresponding to walking times of roughly five and ten minutes.

Bicycle Circulation

Montgomery College encourages bicycle riding to and from Campus, though riding on Campus proper is discouraged. The College has a bicycle rack selected as part of the standardized site furnishings section of its Landscape Master Plan. Bicycle racks are provided with each building project for the LEED credit. Bicyclists are typically directed to Falcon Hall, the physical education building, to shower for class or work.

The Metropolitan Branch Trail (MBT) of the Montgomery County path system approaches the Takoma Park side of Campus from the south, terminating along Fenton Street with a Capital Bike Share station. A proposed extension of the MBT north to the Silver Spring Transit Center is expected to be implemented in 2018. According to data provided by Capital Bike Share, the TP/SS Campus Bike Share station averaged 60 rides per week (total inbound and outbound) for the 38 weeks of available data in January-September 2015. The station ridership has increased compared to ridership in 2014.

While the College acknowledges that many of its students may never commute to Campus by bicycle, there is a percentage of students and faculty that could be encouraged to bike to Campus if there were more bicycle amenities provided on Campus. These could include more bike racks, with a percentage of those covered racks located in the existing parking garages. Additionally, posting clear information on the College's website regarding bicycle regulations, bicycle parking locations and other bicycle amenities could help increase ridership.

Figure 2.07 shows the MBT and location of existing bike racks on Campus.

2.2.5 Vehicular Circulation and Parking

Vehicular Circulation

Regional and local access to the Campus is provided by Georgia Avenue and Philadelphia Avenue. Other roadways providing local access include Fenton Street as well as Chicago, New York and Takoma Avenues. Figure 2.08 illustrates the existing Campus access and circulation network. This figure also shows the key locations of off-street parking and public transportation facilities within the Campus area.

The Campus traffic is well distributed on the regional street network, minimizing the impact of traffic patterns on the adjacent roadway network. The Campus vehicle trip distribution pattern from the Montgomery College 2006-2016 FMP is shown in Table 2.07.

FIGURE 2.07 PEDESTRIAN AND BIKE CIRCULATION

- STUDENT WALKING ROUTES
- STUDENT WALKING RADIUS
- CROSSWALK
- PROPOSED MBT TO SILVER SPRING TRANSIT CENTER
- METROPOLITAN BRANCH TRAIL(MBT)
- TRAFFIC SIGNAL
- PEDESTRIAN SIGNAL
- CAPITAL BIKE SHARE STATION

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WG	West Garage (parking)

TABLE 2.07
LOCAL ACCESS DISTRIBUTION

Roadway Approach Distribution from the North on Georgia Avenue and Fenton St.	50%
From the West on Philadelphia Ave.	10%
From the South on Georgia Ave.	5%
From the South on Takoma Ave.	20%
From the North on Takoma Ave and Chicago Ave, and East on Philadelphia Ave.	15%

Mode Share

A survey of students and faculty/staff taken in March 2015 for the College Town Plan obtained information on commuting mode share. The faculty/staff commute by driving is 85%. Information for student mode share and overall mode share to the Takoma Park/Silver Spring Campus is shown in Table 2.08.

TABLE 2.08
TP/SS CAMPUS STUDENT AND TOTAL MODE SHARE, 2015

	Drove	Dropped	Carpool	Transit	Walk	Bike	Other
Students	40%	2%	4%	46%	7%	1%	-
Total	57%	-	2%	33%	4%	1%	3%

Note: 10% of student trips are comprised of auto drop off and pickup. A convenient drop off location is needed on the campus.

Drop off and pickup activity on New York Avenue is a source of neighbor complaints. Since New York Avenue is less than 24 feet wide, stopped vehicles interfere with traffic flow. New York Avenue is posted with "No Parking or Standing" signs. The 55-foot long recessed curb at the Charlene R. Nunley Student Services Center used by the Montgomery College shuttle and other vehicles is not sufficient for all passenger loading that occurs.

Parking

The current off-street parking supply on the Campus is 1,273 spaces of which 674 are located in the East Garage and 372 in the West Garage. This inventory includes 46 spaces in an underground facility beneath the Morris and Gwendolyn Cafritz Foundation Arts Center. Note that this inventory does not include on-street spaces within the area as these spaces are not owned/operated by the College.

On-street spaces located on Chicago Avenue and Takoma Avenue along the Campus boundaries are metered with a two-hour time limit. There are 34 metered spaces and they are available to both College and non-College patrons. Other on-street parking east of Georgia Avenue in proximity of the Campus is signed for municipal permit parking only. Parking for the Cultural Arts Center, a facility that hosts numerous cultural activities in the evenings, is accommodated adequately and conveniently by the adjacent off-street west campus parking spaces. Parking usage surveys conducted annually by the College indicate that approximately 50% of the west campus parking is available in the evening.

(See Figure 2.08 Parking and Vehicular Circulation).

FIGURE 2.08 PARKING AND VEHICULAR CIRCULATION

EXISTING BUILDINGS

PARKING FACILITIES

SHUTTLE BUS STOP

01 # PARKING SPACES

VEHICULAR CIRCULATION

METRO BUS TRANSIT CORRIDOR

BUS STOP

CF	The Morris and Gwendolyn Cafritz Foundation Arts Center
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Montgomery College completed its annual survey of parking occupancy in September, 2014 and identified a 91% overall usage of off-street spaces at the peak period of 11 am. Occupancy of student spaces was 97% while occupancy of faculty/staff spaces was 87%.

Established guidelines for computing parking requirements are provided by the Maryland Higher Education Commission (MHEC.) MHEC standards for community college parking require 0.75 space for each Full Time Day Equivalent (FTDE) student and 0.75 space per Full Time (FT) Faculty and FT Staff. In addition, visitor parking in the amount of 2% of the total student/faculty/staff spaces is required. Finally, the Americans with Disabilities Act (ADA) requires reserved accessible spaces in the amount of 20 for the first 1,000 spaces plus one space for each 100 spaces over 1,000. The Takoma Park/Silver Spring Campus provides more than the minimum number of accessible spaces required. The east and west campuses need to provide separately for their accessible space demands because of the barrier created by the WMATA/CSX Red Line.

Using MHEC standards, the total required number of spaces for existing conditions would be 2,465, or almost twice the current inventory of 1,273 spaces. Although parking is tight, it appears that there is not a deficit of almost 1,200 spaces as the state standards would suggest. The actual existing deficit based on the College's annual survey is estimated at between 80 and 100 spaces. The main reason for the difference is that a high percentage of students arrive via mass transit and non-auto modes.

Another method for calculating parking needs involves modification of the MHEC requirements and considers a more realistic figure for calculating student parking requirements. Students are by far the largest part of the Campus population, with more than six FTDE students for each Full Time (FT) Faculty and Staff member. In addition, the number of FTDE students is expected to increase by 30% by 2023, whereas FT Faculty and Staff will increase by approximately 7%.

Based on actual counts from the 2014 parking survey, peak student parking demand is accommodated with 95% of student spaces occupied by using a ratio of 0.35 for student spaces. This ratio is consistent with the current student auto mode share of 44% (drive-alone and carpool) at the Campus. Using a student parking ratio of 0.35 prevents an overestimation of the parking deficit. Building an oversupply of parking would be costly and encourage more driving and less use of transit.

By using the MHEC standards of 0.75 space per FT Faculty and FT Staff coupled with a parking ratio of 0.35 for FTDE students, the estimated parking space deficit in 2023 is 375 spaces as summarized in Table 2.09.

TABLE 2.09
TP/SS CAMPUS PARKING NEEDS, 2023

Parking Supply 2013	Parking Deficit 2023 using MHEC standards	Parking Deficit 2023 using modified MHEC standards
1,273	1,192	375

FIGURE 2.09 TRANSIT

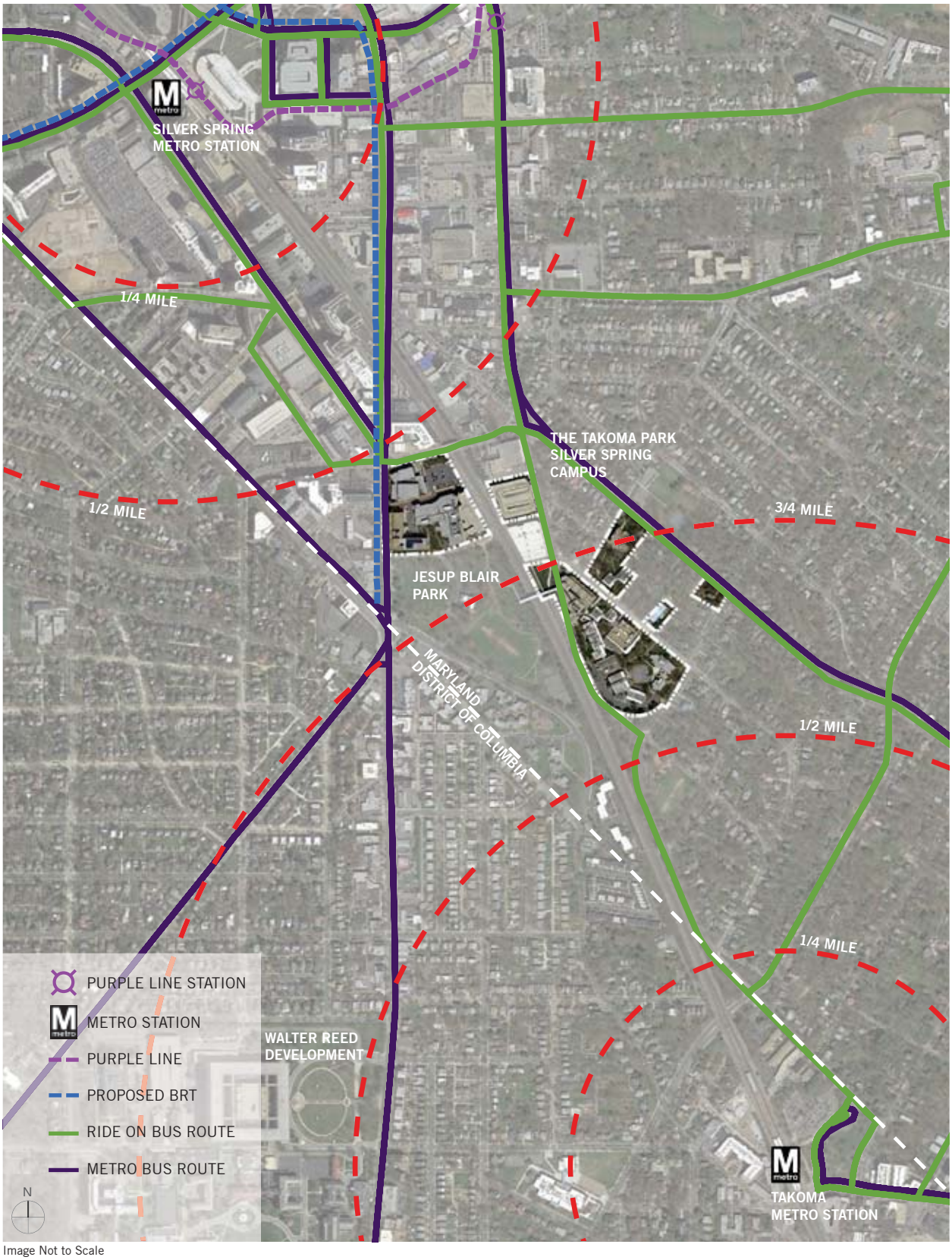

Image Not to Scale

2.2.6 Transit

The Campus is well served by public transportation. The Washington Metropolitan Area Transit Authority (WMATA) and Montgomery County Ride-On operate bus services that include links from the Campus to two Metro stations along the Red Line. Figure 2.09 illustrates the various stations and routes that serve the Campus.

While the vast majority of Takoma Park/Silver Spring students are concentrated within a ten mile radius, and therefore are within reasonable proximity to public transit alternatives, faculty and staff are distributed over a broader geographic area. Over 50% of students but only 15% of faculty and staff arrive to the Campus via bus, light rail, walking or biking. As a consequence, it is unlikely that transportation demand management strategies will have much effect on reducing the demand for faculty and staff parking. Nonetheless, given this Campus' urban environs and the strength of the public transit infrastructure that serves the student population, incentives to public transit and disincentives to single occupant vehicle travel will have a greater impact on this Campus than the other more suburban campuses.

Table 2.10 presents the peak frequency of public bus service, average weekday riders and the percentage of the routes' users that utilize the Montgomery College Pass.

Montgomery College contracts for a shuttle service between the Takoma Park/Silver Spring Campus and Rockville Campus. Shuttle stops are located on New York Avenue at the Charlene R. Nunley Student Services Center and on King Street at the Morris and Gwendolyn Cafritz Foundation Arts Center. Shuttle service starts at 7:00 am and runs approximately every 45 minutes until 7:15 pm. The shuttle greatly decreases the travel time between campuses compared to using public transportation.

TABLE 2.10
TP/SS CAMPUS BUS RIDERSHIP, 2014

Bus Service	Peak Frequency	Average Weekday Riders	% Montgomery College Pass
70 - Georgia Avenue	12	10,625	n/a
F4 - New Carrollton	13	1,320	n/a
17 - Langley Park / Maple Ave	20	1,279	12.8%
18 - Langley Park / Takoma Park	30	798	6.0%
28 - VanGo Shuttle	12	678	1.3%

Source: WMATA; RideOn.

FIGURE 2.10 TRANSIT

PROPOSED BRT

RIDE ON BUS ROUTE

METRO BUS ROUTE

BUS STOP

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P3	Pavilion Three
P4	Pavilion Four
RC	Resource Center
SN	Science North Building
SS	Science South Building
ST	Charlene R. Nunley Student Services Center
WG	West Garage (parking)

2.2.7 Major Utilities

The existing central plant and utility distribution infrastructure is a critical underpinning that supports the Campus' built environment. The College is in the process of developing a separate Utility Master Plan that identifies and documents existing and proposed utility infrastructure needs and recommendations.

The latest Utilities Master plan for the Campus was completed in 2012 and includes an overview of the existing utilities infrastructure systems as well as a detailed assessment of their condition and ability to meet future demand. This plan is currently being updated in coordination with this Facilities Master Plan. An inventory of major utilities infrastructure is illustrated on Figure 2.11.

Mechanical

There are central heating and cooling plants located in the Charlene R. Nunley Student Services Center and the Morris and Gwendolyn Cafritz Foundation Arts Center. Thermal ice storage has been installed in the Charlene R. Nunley Student Services Center with additional modules located in the West Garage and connected to the Morris and Gwendolyn Cafritz Foundation Arts Center central plant. Existing buildings with local DX cooling units are being connected to the central plants as those buildings are renovated. The cooling and heating capacity of the existing central plants is anticipated to be adequate for the future demand on the systems, as is the existing Washington Gas and Light natural gas distribution system.

Electrical

The Campus is served by the Potomac Electric Power Company (Pepco) from a combination of overhead and underground medium voltage lines. Most of the buildings have separate utility meters and local step down transformer to distribute 480/277 volt, 3 phase, 4 wire system in the building except for the Charlene R. Nunley Student Services Center and the Mathematics Pavilion which are being fed from other buildings. The existing Pepco feeders have adequate capacity to accommodate planned Campus expansion.

Natural Gas

Natural gas is provided by Washington Gas and the existing service currently meets the Campus needs.

Water and Sanitary

Water and sanitary sewer service is provided by WSSC, with all Campus buildings being served directly from public mains. There is no private "on-site" system for domestic/fire water service and sanitary sewer on this Campus. The public systems have adequate capacity to serve the Campus' needs.

2.2.8 Information Technology Systems

The main point of presence (MPOP) for the Campus is in the Morris and Gwendolyn Cafritz Foundation Arts Center. Each of the existing buildings is connected via a ductbank system back to CF, and is fed with optical fiber cabling. The existing information technology infrastructure is a critical underpinning that supports the Campus' built environment. The College is in the process of a series of separate planning activities compiled in an Information Technology Master Plan that identifies these information technology resources.

FIGURE 2.11 MAJOR SITE UTILITIES

- CHILLED AND HOT WATER SUPPLY AND RETURN
- 8"-12" WATER LINE
- SANITARY LINE
- 5"-8" NATURAL GAS LINE
- CENTRAL PLANT

CF	The Morris and Gwendolyn Cafritz Foundation Arts Center
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2.2.9 Natural Systems and Sustainability

Stormwater Management

The Campus occupies 19.5 acres consisting of an urban landscape environment around a built environment that is largely impervious and consisting of buildings, roads, sidewalks, and parking lots. Approximately 70% of the total Campus area is an impervious built environment.

On the east campus, the on-site drainage flows from the Charlene R. Nunley Student Services Center connect into the storm drainage system located in Fenton Street where it flows south and connects to a storm drainage system located at the intersection of Fenton Street, New York Avenue and Juniper Street. With the exception of the College buildings located east of New York Avenue, all of the College buildings outfall into a series of on-site storm drainage system including leaching or infiltration trenches. All of the on-site storm drain systems flow to the south where they combine into a single municipal system just south of the Catherine F. Scott Commons. This combined system flows to the east where it connects to the municipal storm drainage system located in New York Avenue.

Based on the 2006 & 2012 Utilities Master Plans, the existing leaching fields are failing. The exact cause for the failing leaching fields is not known and both Master Plans call for further investigation.. Typically, the capacity of the leaching or infiltration trench could diminish over time due to sediment and debris accumulation as well as generally poor draining soils in the area. In the short-term, investigation should be conducted and remediation measures developed to resolve the failing leaching field situation.

On the west campus, the Health Science Center, Morris and Gwendolyn Cafritz Foundation Arts Center, West Garage, Jesup Blair Drive, and the parking lot located north of the West Garage drain through a series of storm drain pipes and flow to the east where they ultimately connect into an existing storm drainage system located within the CSX right-of-way. The Cultural Arts Center drains to the north and connects into a storm drainage system located in Georgia Avenue and Burlington Avenue.

All of the development that occurred on the west campus has been considered redevelopment. Additionally, the west campus is located within the Silver Spring Central Business District, therefore, a waiver for Channel Protection Volume was requested in accordance with Montgomery County Water Resources Technical Policy for Redevelopment, dated September 18, 2003 which waives Channel Protection Volume for sites within the Central Business District when there is less than a 10% increase in impervious area and the site is 2 acres or less.

Stormwater Management Water Quality Volume for all buildings with the exception of the Morris and Gwendolyn Cafritz Foundation Arts Center has been treated using underground proprietary filtering device(s) such as Storm-Filters and Baysavers. The Morris and Gwendolyn Cafritz Foundation Arts Center project removed a sufficient amount of pavement to meet its Stormwater Management Water Quality Requirements.

Pavilion Three, with its renovation under construction as of November 2015, was subject to the requirements of the Stormwater Act of 2007 and included a single micro-bioretention facility at the rear of the building. The bioretention facility was also strategically located to minimize the amount of run-off discharging onto the adjacent residential properties.

Forest Conservation

The original eastern portion of the Campus has maintained a shady feel by the planting and maintenance of trees along the street edge and in the courtyards. The buildings in the eastern portion of the Campus are nestled among mature hardwoods, allowing them to successfully knit into the residential neighborhood. The City of Takoma Park has a stringent tree preservation and reforestation program with which the Campus complies.

The forest conservation requirements for the west campus are currently being met by approved Forest Conservation Plans # MR-04105-M-1 (Approved February 24, 2005), # MR-05106-M-1 (Approved March 23, 2006), and the Final Forest Conservation Plan Amendment #MR2008108-M-1 (Approved September 16, 2009). Under the approved plans, 1.33 acres of afforestation were required and 1.37 acres of afforestation were provided, leaving a surplus of 0.04 acres.

A comprehensive Forest Conservation Plan does not exist for the east campus. No forest exists on the approximately 11 acre east campus. The renovation work on the Catherine F. Scott Commons was exempt from M-NCPPC forest conservation requirements, but tree protection measures were still required. In addition, the City of Takoma Park Arborist had jurisdiction over tree removal on the east campus and did require replacement tree planting for the trees removed during construction. M-NCPPC has reviewed and approved forest conservation exemptions for improvement projects at Pavilion Three (April 2013) and Pavilion Four (December 2012).

2.3 EXISTING BUILDING CONDITIONS and ANALYSIS

2.3.1 Building Usage

Campus wide

The 1970s era buildings have functional problems that are inherent in their small size and informal organization. Several buildings on the east side of Campus have very small floor plates (less than 2,500 net assignable square feet, or NASF), small bay sizes and irregular shapes. These characteristics constrain the use of the space.

The buildings were designed with outdoor corridors and stairs, and elevators shared between buildings that result in a sacrifice of comfort and energy efficiency, and are ill-suited to the hot and cold weather prevalent in this area. In addition, the circulation network into and through buildings does not adequately address the accessibility challenges of some students and faculty and are not compliant with basic regulations of the Americans with Disabilities Act (ADA). Most HVAC and building automation control systems are beyond their useful life and should be replaced.

The newer buildings have addressed many of these issues. Still, the College finds itself deficient in both the size and quantity of classrooms and class laboratories, office, study and meeting rooms, support spaces and relevant classroom inventory. Below is a list of the buildings on the Campus and an assessment of the adequacy of the facilities to support the programs and functions. (See Figure 2.13 Building Usage). The functional adequacy assessments are based on visual inspections and a more comprehensive study of Campus assets conducted by Vanderweil Facility Advisors (VFA) in 2015.

East Campus

Charlene R. Nunley Student Services Center (ST) (110,504 GSF) is a three-level building completed in 2007, providing for the successful consolidation of student services and activities. The building houses Admissions and Records, the International Student Coordinator's Office, the Counseling Center, the Assessment Center, Financial Aid, MC Books & More (the bookstore), MC Copies (graphics and copy shop), MC Munchies (candy and snack shop), the Office of Student Life, the Cashier's Office, the cafeteria, the mailroom, the Office of Safety and Security, computer equipped classrooms and open labs. This building is referred to as the 'one stop shop' for student services. In addition, the facility houses a high performance central heating and cooling plant and distribution system for the east campus. The building is in good condition.

Resource Center (RC) (44,906 GSF) is a two-story structure constructed in 1978 and houses the Campus library collection, study and support space, the Writing, Reading and Language Center, the Career/Transfer Center, a 90 seat lecture room, several classrooms and some faculty offices.

There is insufficient study (especially group study rooms), and support space for the Campus library collection. Circulation throughout the building is indirect and confusing. In addition, access to the Resource Center by individuals who require an elevator is extremely difficult. The building is in poor condition and has a substantial deferred maintenance backlog.

The Catherine F. Scott Commons (CM) (25,070 GSF) is a two-story structure constructed in 1978, that was comprehensively renovated and reopened in 2010. The building houses classrooms, a lecture hall, the Social Sciences Computer Center, the Bliss Exhibition Hall, conference rooms and offices. The building is in good condition.

Falcon Hall (FH) (39,063 GSF) is a two-story structure built in 1978 that houses the Physical Education Department and includes a gymnasium, a pool, locker rooms, a classroom and racquetball courts. Additionally, two outdoor tennis courts are located adjacent to the building.

FIGURE 2.12 BUILDING MASSING AND MATERIALS

Image Not to Scale

Open Pavilions

- Built in late 1975-1978
- Typically one story with mansard roofs and few windows
- Materials include: steel frame and cementitious panels

2 to 3 Story Buildings set back from the street edge

- Built in 1978-1980, except SS (1968)
- Materials include: brick or concrete panels and stucco

3-4 Story Buildings with urban charcter

- Built from 2004-2008, except parking garage (1980)
- Materials include: buff and red brick, grey block and blue metal panels, dark glass

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The classroom is not acoustically separated from the gym. The gym floor has recently been refinished and is now air-conditioned, but suffers from condensation accumulating on the court(s) from uninsulated piping under the floor and the fitness center is undersized to meet demand. The tennis courts see little use by students and faculty and better facilities are located nearby in Jesup Blair Park. The pool is rarely used by students, faculty or staff, though some members of the Takoma Park community use it occasionally. Although some reinvestment has recently been made in the building, it is generally in poor condition and has a substantial deferred maintenance backlog.

Science North Building (SN) (39,950 GSF) is a two-story building constructed in 1978 that houses science laboratories for biology, chemistry and physics, two lecture halls, the Math/Science Learning Center and associated faculty and staff offices. Additionally, it houses shops and storage space for facilities operations and maintenance.

There is a shortage of laboratory and support space (especially isolated experimentation prep areas), access to elevators is not easy for service to all floors, classrooms are under-sized and not configured or equipped to provide flexibility to support desired teaching methodologies or support group learning, and there is insufficient storage space and shop space for facilities operations and maintenance. The building is in very poor condition and has a substantial deferred maintenance backlog.

Science South Building (SS) (23,757 GSF) is a three-story structure with a partial lower level and attached planetarium, built in 1962. It houses the Mathematics Interactive Computing Laboratory, biology and physical science departments and laboratories, faculty offices, and a greenhouse.

There is a shortage of laboratory and laboratory prep space, elevators do not service all floors, classrooms are under-sized and not configured or equipped to provide flexibility for desired teaching pedagogy or support group learning and there is insufficient storage space. The building is in very poor condition and has a substantial deferred maintenance backlog.

North Pavilion (NP) (6,942 GSF) is a two-story structure built in 1975, housing offices for faculty and staff and a general-purpose classroom. The building occupies a small footprint in a very central location of Campus and delivers very little programmable area. The classroom sizes and number are insufficient to meet most proposed programs. The building is in very poor condition and has a substantial deferred maintenance backlog.

Mathematics Pavilion (MP) (6,942 GSF) is a two-story structure built in 1975 and houses classrooms, the Math Tutoring Center and faculty offices. The building occupies a small footprint in a very central location of Campus and delivers very little programmable area. The building also lacks an internal stair linking the two levels. Many spaces are irregular and difficult to program. The building is in fair condition, but poorly designed to support academic programs and desired teaching methodologies.

East Garage (EG) (224,310 GSF) is located on Fenton Street and was built in 1980. It has 665 parking spaces for faculty, staff and students. The facility is in fair condition and is generally well maintained.

Pavilion Three (P3) (15,013 GSF) is a two story structure constructed in 1975 and is undergoing a comprehensive renovation to be completed in early 2016. When renovated the building will house general use classrooms and offices supporting the Humanities program. The building will be in excellent condition after renovation and spatially reconfigured and equipped to serve the Campus well.

Pavilion One (P1) (7,385 GSF) is a two-story structure constructed in 1975 and houses the Business, Management and Information Sciences Department, including the Math Learning Center computer laboratory. There is insufficient space resulting from small sizes of both teaching and open laboratories. Some spaces are accessed directly from outdoor hallways, which results in occupant comfort issues and energy inefficiency. The building is in poor condition and has a substantial deferred maintenance backlog.

FIGURE 2.13 BUILDING USAGE

Image Not to Scale

- ACADEMIC
- STUDENT SERVICES
- ADMINISTRATIVE
- PHYSICAL EDUCATION
- PARKING
- MIXED USE WITH STUDENT SERVICES
- MIXED USE WITH ADMINISTRATIVE AND ACADEMIC
- WD&CE DEDICATED SPACE

CF	The Morris and Gwendolyn Cafritz Foundation Arts Center
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SN	Science North
SS	Science South
ST	Charlene R. Nunley Student Services Center
WG	West Garage (parking)

Pavilion Two (P2) (7,385 GSF) is a two-story structure constructed in 1975 and houses faculty and staff offices, as well as Facilities Operations and Maintenance staff offices. Some spaces are accessed directly from outdoor hallways, which results in occupant comfort issues and energy inefficiency. The building is in poor condition and has a substantial deferred maintenance backlog.

Pavilion Four (P4) (15,873 GSF) is a three-story building constructed in 1980 and houses general-purpose classrooms and faculty offices used by English, Reading and other academic programs. The HVAC system was recently renovated and the former black box theater was converted to large lecture style classrooms. Most classrooms are accessed directly from the courtyard or outdoor hallways, which results in occupant comfort issues and energy inefficiency. The classrooms are all irregular in shape and very small and inefficient. The building is in fair condition, but has spatial and functional compromises. If this building is to remain functional for a long period of time, its exterior envelope will need to be replaced.

Child Care Center (DC) (3, 310 GSF) is a two-story former residence, built in 1924 and renovated in 1994.The building is in moderate condition, but use will be discontinued based on a recent policy decision by the College to relocate all childcare and early childhood education program applied observations to the new childcare facility at the Germantown Campus. The College anticipates they will close this facility in the summer of 2016.

West Campus

Health Sciences Center (HC) (98,038 GSF) is a four-story building completed in 2004 housing the Health Sciences and Nursing programs. The facility includes classrooms and laboratories and offices for faculty and the Dean of Health Sciences. In addition, the building houses a community health center operated by Holy Cross GermantownHospital that offers applied learning experiences for student nurses. The building is in good condition.

The Morris and Gwendolyn Cafritz Foundation Arts Center (CF) (134,748 GSF) is a three-story former industrial building that was renovated in 2007. The home of the College's arts program, it now includes the School of Art + Design at Montgomery College. The building houses ceramic, sculpture, printmaking, drawing, painting, and photography laboratories, general-purpose classrooms, and computer labs. The facility also includes a public gallery, lecture hall and a catering kitchen for receptions. The building also includes the Educational Opportunity Center, the Refugee Training Center and Workforce Development & Continuing Education classrooms and offices.

In addition, the facility houses the College's central computer operations, referred to as the Network Operating Center (NOC), and a high performance central heating and cooling plant and distribution system for the west campus. The building is in good condition.

Cultural Arts Center (CU) (57,243 GSF) is a performing arts building that was opened in 2010. It houses a 500 seat performing arts proscenium theater, supported by a scene shop, changing rooms, rehearsal space and classrooms. In addition, the facility houses a 116 seat studio theater, a 16-station piano laboratory, classrooms, faculty and staff offices and a dance studio. The building is in very good condition.

West Garage (WG) (151,490 GSF) is a parking garage for 357 vehicles on four levels adjacent to the Morris and Gwendolyn Cafritz Foundation Arts Center. The structure was opened in 2010 and is in good condition.



ST - Charlene R. Nunley Student Services Center

RC - Resource Center

SN - Science North

SN - Science North Building

CM - Catherine F. Scott Commons

FH - Falcon Hall (Physical Education)

SS - Science South Building

MP - Mathematics Pavilion
NP - North Pavilion

P1-P2 - Pavilions One and Two

P3 - Pavilion Three

P4 - Pavilion Four

P4 - Pavilion Four

P4 - Pavilion Four

HC - Health Sciences Center

CU - Cultural Arts Center

CF - The Morris and Gwendolyn Cafritz Foundation Arts Center

WG - West Garage

FIGURE 2.14 GENERAL BUILDING CONDITIONS

	0.30 +	POOR
	0.10 – 0.30	FAIR
	0.05 – 0.10	GOOD
	0.00 – 0.05	☺

CF	The Morris and Gwendolyn Cafritz Foundation Arts Center
CM	Catherine F. Scott Commons
CU	Cultural Arts Center
DC	Child Care Center
EG	East Garage (parking)
FH	Falcon Hall (Physical Education)
HC	Health Sciences Center
MP	Mathematics Pavilion
NP	North Pavilion
P1	Pavilion One
P2	Pavilion Two
P3	Pavilion Three
P4	Pavilion Four
RC	Resource Center
SN	Science North Building
SS	Science South Building
ST	Charlene R. Nunley Student Services Center
WG	West Garage (parking)

2.3.2 Building Conditions and Deficiencies

In August, 2015, the College updated the Facilities Condition Assessment for buildings and site infrastructure components including: electrical utilities, storm sewer, sanitary sewer, parking lots, etc. at each of its three campuses. The goals of this effort were to:

- Develop a baseline condition assessment of each facility including related infrastructure components and building systems;
- Provide budget estimates to address required safety improvements and deferred maintenance backlogs for planning purposes;
- Identify building code and accessibility issues and compliance needs to ensure that the facilities are operated as required;
- Utilize facility assessment findings to inform the development, prioritization, budgeting and scheduling of capital and maintenance/repair projects to address facility deficiencies;

The facilities condition assessment process included the following:

- A Current Condition Analyses of existing facility deficiencies including deferred maintenance, deferred renewal, near-term anticipated renewal, recommended discretionary improvements, and code non-compliance issues was completed;
- Anticipated capital renewal analyses developed projections of ongoing degradation of facilities' components and costs associated with renewal or replacement of these components as they reach the end of their useful life;
- Capital funding analyses involved formulation of scenario comparisons showing various funding levels and the effect of each on the condition and value of the building.

Information developed as part of the Facilities Condition Assessment provided information for the development of a Facilities Condition Index (FCI) rating for each building on Campus.

Facility Condition Index (FCI)

The FCI is a standard process for assessing the relative condition of buildings and site infrastructure components, facilitating comparison both within and among the campuses. For each building or site component, the Facility Condition Index (FCI) was developed which measures the relative amount of current deficiencies in the building including recommended improvements and grandfathered issues. The total value of recommended repairs is divided by current replacement value for the building or site component resulting in the FCI. The higher the FCI, the poorer the condition of the facility or system component. The FCI ranges for the standard of services for each building or site component are:

Good: .00 to .05
Fair: .05 to .10
Poor: Greater than .10

FCI is a standard measure used throughout the country; it is recommended by both the National Association of College Business Officers (NACUBO) and the Association of Higher Education Facility Officers (APPA). Table 2.11 summarizes the findings from the 2015 assessment of buildings on the Campus.

TABLE 2.11
TP/SS CAMPUS TOTAL REPLACEMENT AND FCI VALUES FOR BUILDINGS, 2015

	Building Name	Use	Year Built	Size	RV ($1,000)	FCI Cost ($1,000)	FCI
P4	Pavilion Four	Classroom Theater	1980	15,873	3,221	368	0.11
CF	Morris and Gwendolyn Cafritz Foundation Arts Center	Classroom Studios	2007	139,320	36,425	2,861	0.08
CM	Catherine F. Scott Commons	Classroom Office	1978	25,070	5,422	441	0.08
DC	Child Care Center	Child Care	1924	3,310	538	193	0.36
CU	Cultural Arts Center	Theater/Dance Classroom	2009	57,243	16,020	812	0.05
FH	Falcon Hall*	Athletics Recreation	1978	39,063	9,275	4,451	0.48
HC	Health Sciences Center	Classroom	2004	98,038	20,770	2,338	0.11
MP	Mathematics Pavilion	Offices	1975	6,942	759	202	0.27
NP	North Pavilion	Offices	1975	6,942	1,162	603	0.52
P1	Pavilion One	Classroom Student Services	1975	7,386	1,189	548	0.46
P2	Pavilion Two	Offices	1975	7,385	1,376	652	0.47
P3	Pavilion Three	Classrooms	1975	15,013	3,113	360	0.12
RC	Resource Center*	Library Offices	1978	44,906	9,166	4,788	0.52
ST	Charlene R. Nunley Student Services Center	Student Services	2007	110,504	25,803	1,850	0.07
SN	Science North Building	Classrooms	1978	39,950	8,335	3,432	0.41
SS	Science South Building	Classrooms	1962	23,575	5,272	3,140	0.60

* Recent HVAC renovations in these buildings will reduce the FCI below the value reported in this table. The revised FCI would be as follows: Falcon Hall: 0.44, Resource Center: 0.42.
Source: VFA Report, 2015 and Montgomery College Facilities Office

Buildings with an FCI rating of "Poor" should receive highest consideration for renovation through a capital project. For those buildings with an FCI rating of 0.60 or higher more study should be completed to determine if comprehensive renovation or demolition is the most feasible option.

Table 2.12 provides a summary of the building deficiency amount by FCI range.

TABLE 2.12
BUILDING DEFICIENCY FOR CATEGORY AMOUNT AND % OF TOTAL BUILDING DEFICIENCY

Less than 25% deficiency (7 buildings)	$9,039,136	32%
26% to 50% deficiency (6 buildings)	$9,478,863	35%
51% or greater Deficiency (3 buildings)	$8,531,266	33%
TOTAL	$27,049,265	100%

2.4 FACILITIES PROGRAM

2.4.1 Campus Space Planning Factors

There are many planning factors that contribute to the dynamic and shifting landscape of today's higher education institutions. Some of the key planning factors to be considered in campus master planning that are anticipated to influence and drive the demand for higher education programs and the supporting facilities at Montgomery College are discussed in this section.

Past and Projected Enrollment and Program Growth

Montgomery College overall has experienced significant enrollment growth over the past five years. The Takoma Park/Silver Spring Campus has grown by 38% in total student FTE enrollment since 2008 and is projected to increase FTE enrollment by 32% by 2023. During this same planning period, Maryland is expected to see high growth in middle and high skill jobs requiring a two year or four year degree. This increase in jobs, along with the planned enrollment growth, will be a major factor driving the demand for access to educational programs and the supporting facilities.

Other drivers of enrollment growth at Montgomery College and its campuses are anticipated to include state incentive programs such as Dual Enrollment (Maryland's College and Career Readiness and College Completion (CCRCC) legislation) and the Dream Act (Chapter 191 of 2011, Senate Bill 167 Public Institutions of Higher Education – Tuition Rates – Exemptions). In addition, an on-going national trend of escalation in increasing tuition costs and associated fees at four-year institutions continues to make affordability a primary issue for many students. This trend is expected to continue into the foreseeable future resulting in expanded demand for more affordable access at community colleges.

Changes to Teaching Pedagogy

Teaching pedagogy in the 21st Century is focused on providing students with experiential and group based learning activities that promote learning for practical application in the work environment. Teaching methodologies and pedagogy are undergoing transformation and no longer are four walls and a chalkboard sufficient to provide the instructional environment and tools that students and faculty need to be successful. Classrooms must be configured and furnished for flexibility and equipped with robust instructional technology to be adaptable to new teaching methodologies grounded in student-centered and group learning activities. Flexible spaces, both inside and outside of the formal classroom, are needed to support student collaboration, practice, and group work. In addition, more curriculums are requiring laboratory classes. These factors typically require a higher space allocation per student station in instructional spaces and more informal student study spaces outside of the classroom.

2.4.2 Space Utilization

Building space is a valuable institutional resource and is an important asset in supporting teaching and learning, and student development and success. Enrollment management and space scheduling are significant components that impact facilities usage and master planning. Class scheduling directly impacts the utilization of space. To most efficiently use instructional space, class sizes need to be aligned with desired class size cohorts. In this regard, Maryland has established standards for classroom and class laboratory room and student station utilization for community colleges, which is used as the basis for the fall 2014 "utilization snapshot" assessment of Campus.

In accordance with MHEC goals, Montgomery College would ideally schedule classrooms from Monday through Friday, during day hours of 8 a.m. to 5 p.m., at a minimum of 27 of the 45 day hours per week or at a 60% utilization rate for credit instruction. In addition, the College would fill a minimum of 66.7% of the student stations for each classroom scheduled.

TABLE 2.13 TP/SS CAMPUS SPACE UTILIZATION, FALL 2015

		Room Utilization	Student Station Utilization
	Actual Fall 2013	2006 FMP Projected Fall 2023	% Change Fall 2013
The Morris and Gwendolyn Cafritz Foundation Arts Center (CF)			
FL 1	Lecture	49.26%	60.51%
FL 2	Lecture	52.91%	78.48%
Catherine F. Scott Commons (CM)			
FL 1	Lecture	54.81%	45.75%
FL 2	Lecture	54.56%	66.41%
Cultural Arts Center (CU)			
*FL 1	Lecture	3.11%	100.00%
	Lab	4.00%	100.00%
*FL 2	Lecture	32.28%	48.40%
	Lab	3.11%	40.40%
Falcon Hall (Physical Education) (FH)			
FL 1	Lecture	25.22%	85.66%
FL 2	Lecture	7.22%	98.33%
Gym	Lecture	9.56%	49.52%
Pool	Lecture	11.11%	35.56%
Health Sciences Center			
*FL 1	Lecture	39.30%	64.74%
	Labs	1.11%	38.37%
*FL 2	Lecture	22.64%	66.09%
	Labs	17.85%	72.05%
FL 3	Lecture	37.56%	64.77%
	Labs	14.00%	68.75%
*FL 4	Lecture	19.04%	66.46%
	Labs	35.11%	68.79%
HEBR - N/A			
Mathematics Pavilion (MP)			
FL 1	Lecture	59.58%	68.60%

*Spaces on this floor are used for both lecture and lab

TABLE 2.13 TP/SS CAMPUS SPACE UTILIZATION, FALL 2015 cont'd

		Room Utilization	Student Station Utilization
	Actual Fall 2013	2006 FMP Projected Fall 2023	% Change Fall 2013
OC			
OC	Lecture	100.00%	23.60%
Pavilion One (P1)			
FL 1	Lecture	29.83%	78.81%
FL 2	Lecture	30.67%	65.42%
Pavilion Three (P3) - N/A			
Pavilion Four (P4)			
FL 1	Lecture	41.96%	69.34%
Resource Center (RC)			
*FL 1	Lecture	7.33%	83.33%
	Lab	7.33%	66.67%
FL 2	Lecture	43.33%	38.37%
Science North Building (SN)			
*FL 1	Lecture	26.89%	45.97%
	Labs	29.44%	53.33%
*FL 2	Lecture	26.22%	63.59%
	Labs	61.11%	72.99%
*FL 3	Lecture	29.11%	52.71%
	Labs	22.22%	75.90%
Science South Building (SS)			
FL 1	Lecture	37.39%	62.03%
*FL 2	Lecture	30.74%	60.20%
	Labs	76.44%	62.80%
FL 3	Lecture	37.31%	49.79%
Charlene R. Nunley Student Services Center (ST)			
FL 3	Lecture	51.33%	54.78%

Source: Montgomery College, Fall 2015 Schedule Data

A general campus wide analysis of average room and station utilization by academic building for the fall 2014 semester for this Campus was completed with the results summarized in Table 2.13. Observations can be made from the snapshot analysis that may identify opportunities to better utilize space and seating capacity as well as physical constraints limiting the better use of space. However, these observations and any subsequent recommendations must be developed with caution, since both quantitative and qualitative issues can affect scheduling and utilization of rooms.

A general assessment by academic building, based on fall 2014 scheduling data from the College for credit classes during day hours from Monday through Friday, yielded the following observations.

- Classrooms in some buildings have capacity to accommodate additional classes based on room utilization data;
- Laboratories in some buildings have capacity to accommodate additional classes based on room utilization data;
- The Campus is meeting or exceeding the Maryland student station utilization rates for classes and class laboratories that are scheduled, with a few exceptions;
- Some classes and class laboratories are scheduled outside of or overlap the typical scheduling matrix hours used for Monday, Wednesday and Friday and Tuesday and Thursday, creating inefficiency. In some cases this may be unavoidable due to curriculum requirements;
- Late afternoon hours in some buildings appear to be under-scheduled on Fridays.

Qualitative Assessment

At the heart of determining the quality of space, and more specifically instructional space, is an analysis of how effectively space is meeting the intended function. General observations can be made based on the age, condition, and general utilization of the building, and input from Campus staff as to how effectively space is being used. Observations about the quality of existing space include:

- Eleven of the thirteen academic and academic support buildings on the Campus were designed and constructed more than 30 years ago. Although some have been renovated, the instructional space configuration of these buildings has not changed, except Pavilion Three, and most do not fully support the desired teaching pedagogy. Classrooms in these buildings and others are designed primarily for a lecture set up to support the “Sage on the Stage” teaching style. These spaces typically do not provide flexibility for reconfiguring furniture and using instructional technology to support group and collaborative learning;
- Most of the older academic buildings have little or no informal/social student study and learning space for use in student-to-student, student-to-faculty and/or small groups outside of the classroom or laboratory.

2.4.3 Campus Space Needs

Assessments of the current and projected facilities space needs at the Takoma Park/Silver Spring Campus are generated by applying current and projected planning data related to enrollment, instructional delivery, library collections, faculty, and staff to the State of Maryland guidelines for facilities at community colleges. The planning data referenced above and used to compute current and projected space needs is documented in Table 2.14.

Current and projected space needs are then computed for each space type in the Campus inventory for which a guideline is available. Comparisons are made between the current inventory of the Campus and the inventory planned for the ten year planning period, given approved capital projects and surpluses or deficiencies relative to the respective space categories are identified. Table 2.15 documents the results of this analysis and breakdown by Room Use category.

TABLE 2.14
TP/SS CAMPUS SPACE NEEDS ASSESSMENT PLANNING DATA, FALL 2013 AND 2023

	Actual Fall 2013	2006 FMP Projected Fall 2023	% Change Fall 2013
FTDE	**2,567**	**3,334**	**30%**
FTDE (inc on line)	2,792	3,626	30%
Day SCH	41,880	54,390	30%
Day WSCH-Lec	38,419	48,370	26%
Day WSCH-Lab	21,956	26,940	23%
Day WSCH	60,375	75,310	25%
FTE	**4,487**	**5,910**	**32%**
Credit Hours (SCH)	57,186	73,770	29%
Bound Volume Equivalents	102,595	110,802	8%
FTEF	197	219	11%
FT fac	139	152	9%
PT fac	232	266	15%
FTES	254	266	5%
FT staff	246	257	4%
PT staff	30	36	20%
Planning Head Count	1,618	2,051	27%
Headcount Student (HCS)	**7,755**	**9,820**	**27%**

Source: Montgomery College

TABLE 2.15
TP/SS CAMPUS COMPUTATION OF SPACE NEEDS, FALL 2023

HEGIS CODE	ROOM USE CATEGORY	NEED 2023	PROJECTED INVENTORY	SURPLUS (DEFICIT)
100	**CLASSROOM**	**56,309**	**40,616**	**(15,693)**
200	**LABORATORY**	**179,673**	**75,033**	**(104,640)**
210	Class Laboratory	164,721	55,665	(109,056)
220	Open Laboratory	14,952	19,368	4,416
300	**OFFICE**	**84,824**	**79,778**	**(5,046)**
310-350	Office/ Conf. Room	82,294	75,391	(6,903)
320	Testing/Tutoring	2,530	4,387	1,857
400	**STUDY**	**37,639**	**19,437**	**(18,202)**
410	Study	22,250	11,126	(11,124)
420-30	Stack/Study	10,992	7,293	(3,699)
440-55	Processing/Service	4,397	1,018	(3,379)
500	**SPECIAL USE**	**61,320**	**29,441**	**(31,879)**
520-23	Athletic	54,600	25,645	(28,955)
530	Media Production	5,720	3,796	(1,924)
580	Greenhouse	1,000	0	(1,000)
600	**GENERAL USE**	**52,365**	**51,532**	**(833)**
610	Assembly	16,120	18,012	1,892
620	Exhibition	2,530	5,058	2,528
630	Food Facility	17,010	12,689	(4,321)
640	Childcare	No Allowance	No Allowance	No Allowance
650	Lounge	6,075	9,004	2,929
660	Merchandising	2,630	4,991	2,361
670	Recreation Space	No Allowance	No Allowance	No Allowance
680	Meeting Room	8,000	1,778	(6,222)
700	**SUPPORT**	**26,066**	**39,953**	**13,887**
710	Data Processing	2,500	1,196	(1,304)
720-740	Shop/ Storage	19,182	37,343	18,161
750	Central Service	4,000	1,414	(2,586)
760	Chemical Storage	384	0	(384)
800	**HEALTH CARE**	**912**	**0**	**(912)**
900	**RESIDENTIAL**	**No Allowance**	**No Allowance**	**No Allowance**
050-090	**ALTERATIONS/ IND USE**	**No Allowance**	**No Allowance**	**No Allowance**
	Total NASF:	**499,108**	**335,790**	**(163,318)**

Source: Montgomery College

Based on the computation of space needs in Table 2.15, the Campus is projected to need an additional 163,318 NASF of space to accommodate the planned enrollment growth. Major deficits in academic and academic support space categories are projected in class laboratory, library and study, classroom and faculty/staff offices especially for part time faculty. These needs will be specifically addressed in Section 2.5.4.

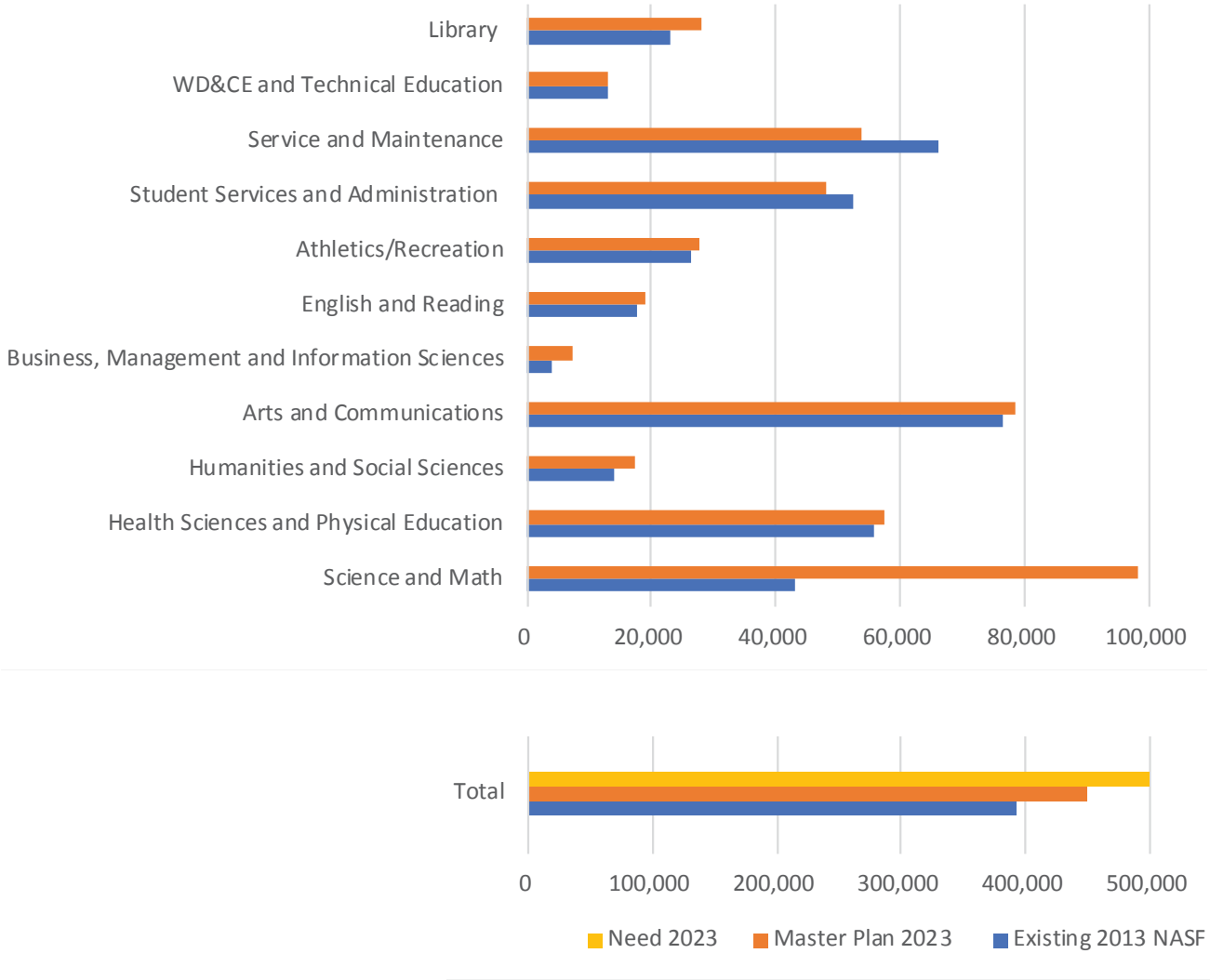
In addition to the quantitative space needs identified in this section, there are several programmatic and qualitative space issues and challenges that need to be addressed.

There is a need for more flexible classroom and laboratory space on Campus to accommodate group based learning and collaboration that is central to the desired teaching methodology. This includes providing instructional spaces with a larger student station space allocation and flexible furnishings to allow for multiple configurations for small and larger groupings of students to engage and interact. It is also desired that instructional spaces include robust technology and wall writing surfaces to support in-class activities and exercises.

Redevelopment of the library facilities on each campus is paramount to the evolution of these resources into a true learning commons that provides additional and appropriately configured and equipped instructional spaces, individual and group study areas and computer stations. In addition, the introduction of faculty and staff technology rich “sand box” spaces, lounges and cafes and expanded collaboration zones are desired for the library learning commons on each campus.

The previous Facilities Master Plan identified the significant challenge posed by the poor condition of older buildings on the east Campus. With the exception of minor renovations in the Catherine F. Scott Commons and Pavilion Four, as well as a major renovation of Pavilion Three, most of these concerns have not been addressed. The majority of the east campus was constructed during the mid to late 1970s. Most of these facilities are more than 30 years old and have not been renovated, resulting in building systems that have reached the end of their useful life. In addition, most of the floor configurations in these buildings contain irregularly shaped instructional and meeting spaces that are not ideal for teaching and learning. Often floor plates are very small and inefficient. Academic space should be flexible to respond to and adapt to rapidly changing technological and pedagogical shifts in education, which is not the case in many of these facilities.

FIGURE 2.15 PROPOSED PROJECTS IMPACT ON PROJECTED SPACE NEEDS, FALL 2023



2.5 FACILITIES MASTER PLAN

2.5.1 Campus Master Plan Guiding Principles

A series of guiding principles were developed to assist in the preparation of the Facilities Master Plan, which include.

1. Develop new and renovated facilities to support academic and student programming in support of the College Mission

    - Support the College's goal of establishing and nurturing unique roles and partnerships for the Takoma Park/Silver Spring Campus in meeting the educational, economic, and work force development needs of Montgomery County as they relate to the health sciences, the arts and STEM disciplines;

    - Provide sufficient and adequate space—classrooms, labs, offices, study, meeting rooms, and support facilities—based on existing and projected needs, so that each and every area can contribute creatively and productively in supporting students;

    - Co-locate departments and functions rationally, to optimize functional efficiency and provide the ease, energy, and excitement generated by the synergy of proximity;

    - Present students the needed range of opportunities to study and learn collaboratively in supportive environments with assistance of faculty, librarians, counselors, and staff;

    - Afford students opportunities to meet and develop socially through formal programs of leadership, recreation, and athletics, and informally in inviting indoor and outdoor spaces;

    - Maximize the use of land resources available to the Campus while retaining its unique character, quality, and setting; and

    - Invite students, faculty, staff, community members, and visitors to participate in the varied Campus and College activities by organizing the buildings, parking, outdoor athletic facilities, and circulation for pedestrians, the disabled and elderly, to make their experience pleasant and successful.

2. Rejuvenate and focus new development for the east campus

    - Replace obsolete buildings as soon as is feasible; in particular, replace Science South Building and Science North Building, along with Falcon Hall, the Resource Center, and the North and Mathematics Pavilions;

    - Retain an appropriate scale of development adjacent to residences along New York Avenue (two stories) while proposing larger scale structures closer to Fenton Street and the center of Campus. Third floor setbacks are feasible along New York Avenue;

    - Prioritize retention of existing programs while facilities are being renovated or constructed. This principle points to building new program facilities in a location other than where they are currently located. Providing temporary facilities is an option, but space constraints on this Campus are significant and might preclude this option;

    - Enhance the character and landscaping of the courtyards within the east campus. Provide high quality, linked open space and accommodate the memorial garden that is currently located in the Campus court-

yards. Encourage pedestrian circulation through the interior courtyards and buildings of the east campus to minimize impact on the surrounding neighborhood.

3. Preserve the existing character of the historic neighborhood adjacent to the east campus

- Utilize the four existing pavilion buildings on the east side of New York Avenue as appropriate until renovations are deemed necessary. These pavilions are needed to respond to the Campus' overall space need and for academic swing space during construction of new buildings on Campus. Landscape the sites so that they respect the historic character of the community and encourage student use within these green spaces. Pavilion Three is currently being fully renovated, and Pavilion Four has recently had its HVAC systems renovated, leaving P1 and P2 in need of significant renovation;

- Vacate the existing Child Care Center at the corner of Pennsylvania Avenue and Takoma Street.

4. Implement the Facilities Master Plan to advance the sustainability and resource conservation objectives and programs of the College.

- Extend the existing high performance central plant distribution system to new and renovated buildings on the Campus. Building designs for new and renovated facilities should be undertaken in an environmentally sensitive manner that responds to the sustainability and resource conservation programs for the College. Building designs for new and renovated facilities should be completed to achieve Leadership in Energy and Environmental Design (LEED) Silver Certification at a minimum;

- Look to improve operating efficiencies and energy conservation by replacing rather than renovating some of the oldest and outdated facilities on Campus.

5. Investigate opportunities for future Campus growth

- Look for opportunities to acquire and develop adjacent properties on Burlington Avenue and Fenton Street. This is a potential key gateway for the Takoma Park side of Campus and a connector across to the Silver Spring side;

- Coordinate with Montgomery County regarding possible opportunities to develop facilities in Jesup Blair Park. Locating a structure in the park alongside the WMATA/CSX tracks and physically connected to the pedestrian bridge could:

    - Strengthen the connection between the two sides of Campus. This could be accomplished by building a new facility (potentially the Health and Fitness Center described in Section 2.5.4) in Jesup Blair Park rather than on the Takoma Park side of Campus;

    - Increase safety along the pedestrian bridge. This could be accomplished by incorporating the pedestrian bridge into a new building that is largely transparent to the outside;

    - Enhance the views from the Silver Spring side of Campus toward the Takoma Park side of Campus by creating a visual barrier to the WMATA/CSX tracks and storage facilities across the tracks;

    - Activate the connection between the east and west campuses. If a College building such as a new Health and Fitness Center were located in the park, this type of facility could act as a well-lit, active beacon that would facilitate a stronger connection and outreach to the Takoma Park and Silver Spring communities.

FIGURE 2.16 COLLEGE TOWN PLAN

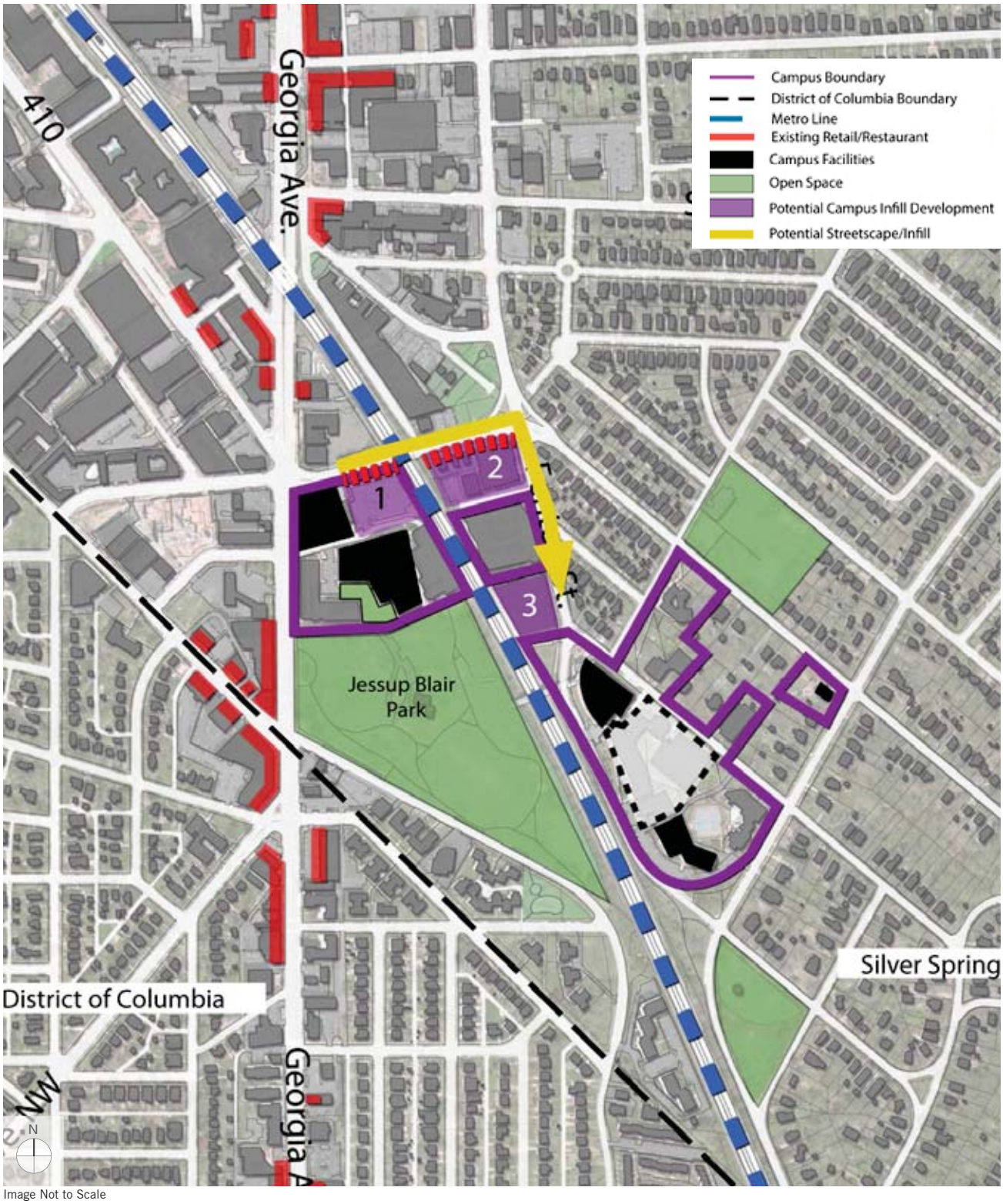


Image Not to Scale

The long-term future development of the Campus should respond to the fact that the Campus straddles the WMATA/CSX tracks and is sandwiched between a historic residential neighborhood in the City of Takoma Park (east campus) and the high-density commercial area of the Silver Spring Central Business District (west campus). The small parcels and the proximity of the residential neighborhood is a constraint on the intensity of development on the Takoma Park side. The presence of Georgia Avenue as a barrier and Jesup Blair Park limit expansion of the Campus to the west.

A possible scenario for future growth could be expansion along Fenton Street adjacent to the existing East Garage. Acquisition and development of these parcels would allow for higher density development adjacent to both sides of the Campus. The opportunity to acquire available parcels should be considered in the future to support the long-range growth and development of the Campus. Further, acquisition and expansion along Burlington Avenue would strengthen the connection between the two sides of Campus.

The Campus currently has one parcel possibly available to it for future development. This parcel is the existing surface parking lot located immediately east of the Cultural Arts Center. This property is currently owned by the Montgomery College Foundation, a non-profit organization which supports the College, but is not controlled by the College. While the future of the parcel's redevelopment is not identified with a programmed use at this time, the College anticipates that this site could provide the Campus with a unique opportunity for future growth and expansion.

2.5.2 Response to External Planning Factors

College Town Plan

In the fall of 2014, Montgomery College, led by its Department of Advancement and Community Engagement, engaged a team led by U3 Advisors to create a College Town Plan for Montgomery College.

The College Town Plan makes a range of programmatic and planning recommendations, many of which align with some of the goals of this Facilities Master Plan. They include recommendations as follows:

Short Term:

- Enhance gateways intersections with signage and landscape improvements at these intersections
    - Fenton Street and Takoma Avenue
    - New York Ave and Takoma Avenue
    - Fenton Street and New York Avenue
    - Georgia Avenue and Burlington Avenue
- Implement interior signage and way finding
    - Build on proposed improvements for Campus edges and gateways;
    - Improve signage and wayfinding between east and west campus.
- Identify interior building spaces and outdoor spaces that could host public events
    - Market the potential spaces to the surrounding community and local organizations;
    - Investigate possibility and feasibility of hosting events in Jesup Blair Park;
    - Begin hosting public events.

FIGURE 2.17 CURRENT CAMPUS PLAN

EXISTING CAMPUS BUILDINGS

CF	The Morris and Gwendolyn Cafritz Foundation Arts Center
CM	Catherine F. Scott Commons
CU	Cultural Arts Center
DC	Child Care Center
EG	East Garage (parking)
FH	Falcon Hall (Physical Education)
HC	Health Sciences Center
MP	Mathematics Pavilion
NP	North Pavilion
P1	Pavilion One
P2	Pavilion Two
P3	Pavilion Three
P4	Pavilion Four
RC	Resource Center
SN	Science North Building
SS	Science South Building
ST	Charlene R. Nunley Student Services Center
WG	West Garage (parking)

Medium Term:

- Prepare a feasibility study for building renovations;
- Identify sites, along Campus edge, for potential acquisition or investment, such as properties along Georgia Avenue adjacent to Jesup Blair Park.

Long Term:

- Implement building renovation plans, in phases;
- If feasible, acquire and redevelop properties along Campus edge;
- Focus on properties along Georgia Avenue.

City of Takoma Park and Montgomery County Concerns

Montgomery College and the City of Takoma Park have established an agreement regarding College development on the Takoma Park side of Campus. This document, the Agreement between the City of Takoma Park, Montgomery College, Historic Takoma Inc and Montgomery County, dated July 30, 2002 essentially states that Montgomery College will:

- Submit plans for review of any of College property that is in the Takoma Park Historic District and adhere to the Montgomery County Code Historic Preservation Ordinance for those properties (note that only the College's Child Care Center Facility is in the Takoma Park Historic District;)
- Consult with the City of Takoma Park and the local community regarding substantial changes to any of their buildings;
- Seek and obtain all local permit review required in the Takoma Park Historic District.

The City of Takoma Park Master Plan, approved and adopted in 2000, acknowledges the College's need for expansion and identifies expansion opportunities on the Takoma Park and Silver Spring sides of Campus, as well as in Jesup Blair Park.

Neighbors

Some neighbors on the Takoma Park side of Campus have continuously opposed the College's development of their property, including renovations and new construction. The College has accommodated many of the neighbor requests for reducing massing of new buildings (for example, reducing massing of the Charlene R. Nunley Student Services Center along New York Avenue, reducing massing of the renovated Pavilion Three, and allowing one of the neighbors to have purview of exterior color selection on the renovated building.) New development proposals on the Takoma Park side of Campus are nonetheless still opposed by a vocal minority of neighbors, who insist that the College shift all development to the Silver Spring side of Campus, or acquire new properties along Fenton Street and locate College programs there.

While the College is also interested in growing the Campus in these areas, there is currently no property readily available to the College on the Silver Spring side of Campus or along Fenton Street, and acquisition of new properties for development is outside the purview of the ten year planning period. Both these options are described in Section 2.6.3.

2.5.3 Proposed Campus Structure and Character

New construction over the last fifteen years on the Takoma Park/Silver Spring Campus, with the exception of the Charlene R. Nunley Student Services Center, has been on the Silver Spring (west) campus. This area bounded by Georgia Avenue and the WMATA/CSX tracks has seen a transformation during this time, establishing a strong presence in the Silver Spring community along George Avenue, doubling academic space and creating 372 new parking spaces on the Campus.

For the 2013-23 planning period, it is anticipated that the Campus renewal will focus on the east campus. In consideration of the existing space constraints, the goal is to develop a higher density core along Fenton Street, while maintaining the scale of the existing structures along the edge of the residential community. Obsolete buildings for the sciences, math and the library are proposed to be replaced with new structures. Renovations of P1, P2 and P4 should maintain the general small scale of those structures.

Gateways and Views

Proposed new construction along Fenton Street at Takoma Avenue, replacing Falcon Hall and Science South Building, will offer the opportunity to enhance the Campus gateway at that location. At the same time, new construction and building additions along New York Avenue should maintain a porous edge and continue to maintain and encourage views from New York Avenue into the Campus interior courtyards.

Open Space and Landscape:

The outdoor spaces on the east campus are critical components of the functioning of the adjoining buildings. Most buildings in the original Campus currently open onto these landscaped spaces. The courtyards provide the little on-campus open space available to students.

Within the original Campus the existing landscaped courtyards should be restored and retained. The plan proposes improving these spaces, with enhanced landscaping, pedestrian paths and amenities. The landscaping should reinforce the building entrances and pedestrian paths between them, while creating pockets of shady areas for study and congregation of students.

A new landscaped courtyard will be created as an integral part of the new Math and Science Center Building. This space could function as an outdoor classroom as part of the science teaching curriculum, and should be visually interconnected with the other courtyards. The redevelopment of this space should be phased with the construction of the new Math and Science Center Building. An existing memorial garden will be displaced during construction and replaced in a prominent location and integrated into the design and construction of the new courtyard.

The paths through the courtyards on Chicago Avenue and to the south of the Charlene R. Nunley Student Services Center should allow for strong visual and physical connections across New York Avenue.

Streetscapes

It is critical to maintain the streetscape along New York Avenue at a residential scale in keeping with the immediate neighbors across the street. Fenton Street, on the other hand, faces the WMATA/CSX tracks and offers an opportunity for a taller, more dense streetscape. Where Fenton Street meets Takoma Avenue, the streetscape scale should be reduced to be a better fit with the neighborhood. This approach might manifest itself with four story structures fronting Fenton Street, stepping down to two- or three- story structures as they near Takoma Avenue or maintaining setbacks. Proposed new construction along New York Avenue should maintain a two-story height, but could step up to three stories toward the Campus interior, similar to the massing of the Charlene R. Nunley Student Services Center.

Street trees are both an amenity to the Campus and serve to reinforce the existing character of the historic neighborhoods of Takoma Park. Trees should line all of the streets along the Campus edges. The landscaped setback and mature trees along Philadelphia Avenue should be retained when Pavilion Four is renovated. In consideration of views from streets and courtyards, all loading areas, mechanical equipment and service areas should be screened from the street and pedestrian paths.

2.5.4 Proposed Building Projects

The 2013-2023 Building and Site Concept Plan is included as Figure 2.18, which documents the proposed location, footprint and height of proposed new buildings on Campus. The 2013-2023 Building and Site Concept Plan is in response to the space needs by academic grouping documented in Figure 2.15.

Below is a summary description of the proposed projects recommended in the 2013-2023 Building and Site Concept Plan. These summary project descriptions, along with additional work proposed in the 2013-2023 Landscape and Open Space Plan (See Figure 2.19), and recommendations from the utility and information technology infrastructure, environmental and sustainability, and circulation and parking sections will be used to develop responsive capital projects that address the identified facility needs through 2023. These projects will be the basis of the Facilities Master Plan.

1. Math and Science Center Building (73,555 NASF 134,600 GSF)

This new facility is proposed to include: laboratories and prep rooms, classrooms, a Math and Science Learning Center, faculty and staff offices, a greenhouse, a planetarium and support space for the math and science programs on the Campus, including Math, Biology, Chemistry, Engineering, Geology, Meteorology, Astronomy, Computer Science and Physics. The new building has been developed to accommodate growth of existing programs and provide opportunities for new offerings to meet demand, such as cybersecurity classes. The building will be located on the site currently occupied by Science South Building and Falcon Hall.

The Math and Science Center Building will be completed in one phase, beginning with the demolition of Science South Building and Falcon Hall. This will permit academic programs to continue operation during construction in Science North Building, the Mathematics Pavilion and the Resource Center. Both buildings are far beyond their useful life and were assessed to have extremely high FCI ratings according to the VFA assessment completed in August 2015. Demolition of both structures will provide a significant footprint that can accommodate a new Math and Science Center Building.

Massing and Materials:

The new building will be constructed up against the setbacks for Fenton Street and Takoma Avenue. The building will be three stores in height, plus a mechanical penthouse. The proposed building forms a courtyard in the open space that is currently occupied by the tennis courts. The landscaped courtyard should be integrated into the new facility and possibly provide an outdoor classroom.

The northern edge of the proposed building will stop prior to Science North Building, allowing that building to remain and the science programs to continue to function during construction. Once the new Math and Science Center Building is complete, Science North Building could have minor renovations completed to allow temporary use as surge space or to accommodate overflow general classrooms. If Science North Building is to remain in place for a long period of time after construction of the new Math and Science Center Building, it will likely need a full envelope replacement.

FIGURE 2.18 2013-2023 BUILDING AND SITE CONCEPT PLAN

EXISTING BUILDING

NEW BUILDING

RENOVATION BUILDING

CF The Morris and Gwendolyn Cafritz Foundation Arts Center
CM Catherine F. Scott Commons
CU Cultural Arts Center
DC Child Care Center
EG East Garage (parking)
HC Health Sciences Center
P3 Pavilion Three
P4 Pavilion Four
ST Charlene R. Nunley Student Services Center
WG West Garage (parking)

1 **MATH AND SCIENCE CENTER BUILDING**
FOOTPRINT - 45,000 GSF
TOTAL(3FL) - 134,600 GSF

2 **LIBRARY LEARNING COMMONS**
FOOTPRINT - 17,200 GSF
TOTAL(4FL) - 62,734 GSF

3 **MATH BUILDING**
FOOTPRINT - 15,200 GSF
TOTAL(3FL) - 45,600 GSF

4 **HEALTH AND FITNESS CENTER**
FOOTPRINT - 29,400 GSF
TOTAL(1-2FL) - 49,230 GSF

PARKING GARAGE
TOTAL(2FL) - 220 +/- SP

5 **PAVILION ONE AND PAVILION TWO**
FOOTPRINT - 10,478 GSF
TOTAL (1-2FL) - 14,771 GSF

FIGURE 2.19 2013-2023 LANDSCAPE AND OPEN SPACE PLAN

NEW GATHERING SPACE

EXISTING KEY AREA

PRIMARY CAMPUS PEDESTRIAN PATH

SECONDARY CAMPUS CIRCULATION AXIS

STUDENT WALKING RADIUS

MAJOR BUILDING ENTRANCE

CF The Morris and Gwendolyn Cafritz Foundation Arts Center
CM Catherine F. Scott Commons
CU Cultural Arts Center
DC Child Care Center
EG East Garage (parking)
HC Health Sciences Center
P3 Pavilion Three
P4 Pavilion Four
ST Charlene R. Nunley Student Services Center
WG West Garage (parking)

1. Create interconnected, landscaped courtyards that:

    - reinforce the building entrances and pedestrian paths between them;
    - create shady areas for study and congregation;
    - provide vistas and transparency from New York Avenue.

2. Create a new landscaped courtyard in between the Catherine F. Scott Commons and the new Math and Science Center Building.

3. Enhance the street trees along the edge of all streets.

4. Create visual and physical links across New York Avenue between courtyard spaces.

2. Library Learning Commons (38,895 NASF 62,734 GSF)

This project replaces the existing Resource Center with a new Library Learning Commons, This new facility is proposed to include: student study space (group and individual), space to access library services, stack and library processing and service space, a Computer Training Center and both a Social Sciences Learning Center and a Reading and Writing Learning Center, instructional space as well as a Media Resources Facility, offices and support space. The building will be located on the site currently occupied by the North and Mathematics Pavilions and will require the demolition of the North and Mathematics Pavilions.

The new building could physically link with the Charlene R. Nunley Student Services Center, continuing the interior pedestrian connections there and forming another lobby/atrium space for Campus assembly uses and as a hub for connections to future buildings, such as the new Health and Fitness Center on the site of Science North Building.

This project has been sequenced to allow the existing Resource Center to remain functional during construction of the new building. The proposed demolition of the two pavilions and the existing Resource Center is supported by their functional inadequacy and the poor condition of the buildings as reflected in their high FCI ratings. Taken together, demolition and replacement is appropriate given the need to also provide for additional space to support program growth.

Careful planning of this project will be required to ensure that existing adjacent facilities are minimally disrupted during the construction process. Functional requirements will require that a single access point to the Library Learning Commons is provided for appropriate management of the collection, and that building support functions are appropriately aligned with the processing and collection management functions.

Massing and Materials:

The new Library Learning Commons should be designed to minimize its apparent size along New York Avenue. Design strategies that will be employed in the design of the building include stepping back the third floor along New York Avenue to reduce its height from the street, allow for transparency through the building to the Campus courtyards, and articulating the building mass in keeping with the small scale of the adjoining residential neighborhood. There is a possibility, because of the existing topography to step down the Library Learning Commons with the slope or to partially bury one floor on the north side to help reduce the scale of the building.

Upon the completion of the Library Learning Commons, the outdoor areas that served as staging areas for the construction of this building and the Math and Science Center Building can be developed and landscaped. The design and quality of the outdoor spaces in the central core of the Campus will be critical to the functioning of these buildings and the image of the Campus.

3. Math Building (27,360 NASF, 45,600 GSF)

This new facility is proposed to meet the total enrollment projections for the Math program that will not be able to be accommodated in the new Math and Science Center Building. It is intended to foster interdisciplinary collaboration between programs and is planned to include general use classrooms, computer laboratories, meeting space, faculty and staff offices and support space.

Massing and Materials:

Situated along New York Avenue, this building should be designed to minimize its apparent size along New York Avenue. It is proposed as a two- to three- story building, with the two-story portion fronting New York Avenue, stepping up to three stories toward the Campus center.

4. Health and Fitness Center (32,900 NASF 49,230 GSF)

This project replaces Falcon Hall and provides for structured parking partially below grade.

The new facility will be in response to demolishing Falcon Hall and Science South Building to provide an adequate site for the new Math and Science Center Building and to address the very poor condition of and substantial deferred maintenance backlog in both buildings. The new Health and Fitness Center will be located on the site currently occupied by Science North Building and will house the Physical Education program and supporting activities including large multi-purpose athletic training and activity spaces, office, general classrooms and support spaces. This facility will be used for multiple purposes including academic instruction, student, faculty, staff and community recreation and wellness, as well as for Campus and community events. This project will also include the construction of an underground parking structure with a capacity of about 220 spaces.

This project will require demolition of Science North Building, which, until its demolition, will very likely continue to be used for Math and Science instruction and support space until funding for the Health and Fitness Center has been secured. Science North Building will be demolished and redeveloped for the Health and Fitness Center. Future investment in the building will be limited to the minimum necessary to keep it in operating condition to support Math and Science.

The proximity of the new Health and Fitness Center to the existing Charlene R. Nunley Student Services Center and the proposed new Library Learning Commons creates an opportunity to physically link the three buildings, possibly with an extension of the large atrium already existing in the Charlene R. Nunley Student Services Center. This building is proposed at two stories, with the expectation that some of the interior spaces such as gymnasiums will be double height spaces.

Parking Garage: The Health and Fitness Center is proposed to be built over a two-level underground parking structure. This parking structure would have to be built before the Health and Fitness Center. Entry and exit for cars would be from Fenton Street.

While the Campus is significantly limited in outdoor athletic facilities, nearby public parks provide space for athletic facilities, including tennis courts and ball fields. The College will coordinate with the appropriate public agencies for use of nearby public park athletic facilities for soccer, softball and tennis.

Note that an alternative location for this building in Jesup Blair Park is shown in the 2023-33 Land Use Plan and in fact may be the preferred location for this planning period if feasible. Building in the park would allow the facility to serve as a connector for the two sides of Campus and as a community amenity. It would help activate and increase security in this underutilized area of the park and could be a beacon of light and a strong visual symbol. It would also screen the tracks and the back of the storage building across the tracks from view from Jesup Blair Park. The Campus ramp from the pedestrian bridge can be integrated into the building, which would enhance the ramp and building with views into fitness and other public areas and views out toward the park. A College use facility in this general area of Jesup Blair Park has been proposed in the 2000 City of Takoma Park master plan.

5. Renovation of Pavilion One and Pavilion Two: (9,295 NASF, 14,771 GSF):

Both pavilions will be renovated to support humanities and social sciences as well as general instructional space for Campus. Because of the relatively high FCI rating and deferred maintenance backlog, each of these buildings will need significant renovation and reinvestment in the future to ensure they continue to function to support the programs in the buildings and the Campus in general.

6. Child Care Center:

The existing Child Care Center located on the corner of Philadelphia and Takoma Avenues will be vacated and is not yet scheduled for repurposing or reuse. The College has decided to discontinue offering childcare at the Takoma Park/Silver Spring Campus.

2.5.5 Proposed Pedestrian and Bike Circulation

Pedestrian desire lines on the Takoma Park/Silver Spring Campus are very clear, due to the concentration of parking and the limited crossings of the railroad tracks linking the east and west sides of the Campus. The Charlene R. Nunley Student Services Center is a meeting point where the pedestrian desire lines connect. One guiding principal of the Facilities Master Plan is to reinforce and enhance the pedestrian connections on the Campus.

The plan makes adjustments to the existing courtyards and proposes a new courtyard in the central core of the Campus, providing clear paths between the entrances of new and existing buildings. In addition, the Facilities Master Plan seeks to enhance pedestrian movement between the two portions of the Campus by proposing improved landscaping, wayfinding signage and paving at the pedestrian plaza just across the street from the Charlene R. Nunley Student Services Center.

The plan also proposes landscape improvements to the open green space between P1, P2 and P4. This is in fact the largest open space on this side of Campus and its use and appearance could be enhanced significantly.

2.5.6 Proposed Vehicular Circulation and Parking

The key proposals and potential transportation impacts and needs are discussed below. Note that vehicular and pedestrian circulation, which includes both the volume and distribution of traffic, is dictated to a significant degree by the location, capacity and management of parking facilities. As such, the analysis of future parking demand, and the supply that will be available to meet that demand, is presented first.

Parking

- According to MHEC standards, the parking requirement for the 2023 Campus population is 3,128 spaces;
- An alternative method for calculating the 2023 parking requirement is described in section 2.2.5;
- The existing parking supply is 1,273 spaces;
- The 10-year change in parking supply resulting from the projects indicated in the proposed Facilities Master Plan includes loss of 87 existing spaces in the Falcon Hall lot and construction of 220 new garage spaces under the proposed Health and Fitness Center;
- The resulting 2023 parking supply is 1,406 spaces. Compared with the parking requirement, the deficit is 1,722 spaces using the MHEC standards and 242 spaces using the alternative requirement;
- In summary, using MHEC ratios, the 2023 parking requirement (demand) is for 3,128 parking spaces. With a 2023 parking supply of 1,406 spaces, including 220 spaces under the proposed Health and Fitness Center, that leaves the Campus with a 2023 deficit of approximately 1,722 spaces per MHEC standards.

The recommendation is for the College to continue to closely monitor enrollment growth and parking demand on an annual basis. If enrollment grows as planned or faster, the College should consider enlarging the proposed Health and Fitness Center parking structure, evaluate other options to build or lease more parking and/or take actions to incentivize and encourage increased use of mass transit, biking and walking to address and manage demand.

Vehicular Access

Parking for the west campus is accessed off Georgia Avenue via King Street and Jesup Blair Drive. Both access points are currently unsignalized. The King Street access point also provides access to commercial developments and public parking located along this roadway to the west of Georgia Avenue. Jesup Blair Drive also provides primary vehicular access to the adjacent Jesup Blair Park. Based on these considerations, signalization, geometric and pedestrian crossing improvements should be considered at these intersections with Georgia Avenue.

In order to address concerns about vehicle drop off and pick up, it is suggested that a new passenger drop off/pick up area be established on Fenton Street in the vicinity of the new Health and Fitness Center. Signage and pedestrian walkway improvements are needed to support and encourage use of this new drop off/pick up area. This improvement should be designed to set back curb line to allow vehicles stopped to be out of the driving lane and not impede traffic flow.

Vehicle Trip Generation Impacts

The impact associated with the Facilities Master Plan is driven by the location and capacity of the Campus parking facilities. Since the new parking spaces are located on the east side of the WMATA/CSX tracks, new trips and traffic impacts would be focused on the east campus. The net increase in parking is 133 spaces. Additional trips generated by this new parking were estimated using information from a 2005 traffic study completed by Wells & Associates that assessed the impact of planned development of the west campus. That study estimated the number of vehicle trips generated by additional on-site parking (440 spaces in a structure and surface parking lot) based on 2005 traffic surveys of inbound/outbound trips and the previously-existing parking supply. Using that information, it is estimated that 133 new spaces on east campus would generate an additional 46 a.m. peak hour vehicle trips (total inbound and outbound) and 28 additional p.m. peak hour trips. Those trips would be dispersed over several streets and directions, and are not likely to cause additional congestion.

If more parking ends up being provided than what is proposed above, then the traffic impact of those additional spaces should be analyzed at that time.

2.5.7 Transit Recommendations

The Takoma Park/Silver Spring Campus is well served by existing Metro Bus and Ride On services. A high level of transit mode share has been achieved through the Montgomery College Transit Pass program that allows Montgomery College students to use the Ride On bus service free of charge.

Without assuming the cost and management burden of expanded transit services, Montgomery College should continue to support and promote transit commuting and carpooling. Specific recommendations applicable to the Takoma Park/Silver Spring Campus are:

1. Conduct annual staff Commuter Surveys through Montgomery County Commuter Services program;
2. Participate in Metro's SmartBenefits Transit Benefits Program;
3. Promote transit and ridesharing options for students during fall and spring semester registration;

4. Establish and maintain a Montgomery College Ridesharing App similar to the Montgomery County Community College, Pennsylvania program that can be found at https://www.zimride.com/mc3/;

5. Provide priority parking for carpools and vanpools;

6. Work with the Montgomery County Department of Transportation Bus Stop Improvement Program to enhance passenger shelters and amenities at Ride On and Metro Bus stops serving the Takoma Park/Silver Spring Campus;

7. Develop specific transit wayfinding maps and signs on the Campus that guide new students, visitors and occasional transit users to available transit services. These transit wayfinding maps should show bicycle and pedestrian routes along with local and regional transit services. The transit wayfinding maps may be incorporated into existing wayfinding maps. The graphics should be updated regularly and posted in gateway locations, key buildings and on the Montgomery College website;

8. The Office of Facilities Transportation webpage should be updated to provide transit, bicycling and carpooling maps and information that are tailored to each Campus so that faculty and current and prospective students can easily identify alternative transportation services.

2.5.8 Major Utility Recommendations

Coordinating future utility and information technology infrastructure is an integral part of a successful planning process. The College's Utility Master Plan update is being prepared as part of a separate, but coordinated effort, to optimize the use of utility resources while minimizing potential disruptions, as well as costs. As part of this planning process, the 2006 Utilities Master Plan and 2012 Utilities Master Plan Update for the Takoma Park/Silver Spring Campus were reviewed to determine the adequacy of existing systems and to ascertain the potential for future expansion. As the current Facilities Master Plan is implemented there will be a series of on-going evaluations and analyses undertaken to determine a more complete picture of the utility and information technology infrastructure impacts.

Mechanical

The existing central chilled water and heating plants have adequate capacity to meet the current and projected future demands. District heating and cooling mains will be extended to new building sites as those buildings are constructed. The most significant mechanical issue is the age of many of the HVAC systems in existing buildings, which have exceeded their expected life and rely on older technology. There is an ongoing effort already in place to replace those systems with more efficient equipment and connect buildings to the central plants. As each building is renovated, the local DX units will be replaced with connections to the central heating and cooling plants and possibly redundant cooling systems.

Future renovations should target LEED Gold Certification to achieve a high level of cost effective energy efficiency. Energy benchmarks should be established for each major building compared to equivalent, energy efficient buildings to document potential savings that could be achieved with systemic renovation of HVAC and electrical systems. The results of the benchmarking effort will assist allocation of capital resources to renovation of buildings with the greatest potential for energy savings.

Electrical

The existing Pepco feeders have adequate capacity to accommodate planned Campus expansion. The existing 13.2 KV overhead and underground medium voltage lines will be extended in concrete encased ductbank to serve new pad mounted step down transformers for new buildings in the future. The existing feeders should be

upgraded with 15 kV loop switches to provide loop distribution system to distribute electrical service in two directions to increase the reliability.

Civil

The majority of the proposed building projects will not impact major utilities. The existing chilled and hot water supply/return lines along New York Avenue will likely be impacted by construction of the new Library Learning Commons. In addition, the existing 6" natural gas line along Fenton Street may be impacted by construction of the new Health and Fitness Center. Careful coordination will be required during construction to minimize disruption to service during any relocation of utilities.

It is recommended that all future projects maintain existing drainage patterns in order to avoid possible, otherwise unnecessary, upgrades to downstream public storm drain systems.

2.5.9 Information Technology Recommendations

The addition of new buildings in the Facilities Master Plan will require extending the ductbank system from the nearest available telecommunications manhole to the new building locations. Four (4) new buildings are planned for the TP/SS Campus, and will require sitework/infrastructure to be extended as follows:

TABLE 2.16
TP/SS CAMPUS INFORMATION TECHNOLOGY DUCTBANK RECOMMENDATIONS

Bldg #	Name	Ductbank	Fed From
1	Math and Science Center Building	Four (4) 4" Conduits	Manhole near CM Bldg
2	Library Learning Commons	Four (4) 4" Conduits	Extend from ST Bldg
3	Math Building	Three (3) 4" Conduits	Manhole near CM Bldg
4	Health and Fitness Center	Five (5) 4" Conduits	Extend from ST Bldg

The College is currently in the process of completing a new Information Technology Master Plan, addressing major issues such as a transition to cloud based services in lieu of Campus data centers. If and when this transition occurs, the existing data centers will be abandoned and repurposed. Typical building telecom rooms will need to be slightly larger than in the past. Connectivity requirements between buildings will remain unchanged.

2.5.10 Natural Systems and Sustainability Recommendations

Stormwater Management (SWM)

Stormwater Management is governed by the State of Maryland Stormwater Management Act of 2007, which requires the development of a stormwater management plan that implements Environmental Site Design (ESD) to the "maximum extent practical" and ensuring that structural best management practices are only used where absolutely necessary.

ESD is defined as using small-scale stormwater management practices, non-structural techniques, and better site planning to mimic natural hydrologic run-off characteristics and minimize the impact of land development

on water resources. ESD includes conserving natural resources (drainage patterns, soil and vegetation); minimizing impervious surfaces (roads, walks, roofs) to increase infiltration and evapotranspiration; and using other non-structural practices and innovative technologies.
Moving forward, to ensure ESD SWM requirements are met, site planning should make every effort to maximize green roofs on future buildings and also allow for adequate green space directly adjacent to buildings for the implementation of micro-bioretention facilities either in the form of at-grade planting beds or concrete planters.

Forestation Update

Due to the compilation of all of the previous Forest Conservation Plans, all existing and future development for the west campus will fall under one Forest Conservation Plan. Although amendments may need to be made to the plan, all five parcels of the west campus can be developed under the currently approved plan.

If the entire east campus area were to be "disturbed" during future construction operations, the required afforestation would be approximately 1.65 acres. Actual afforestation requirements will likely be less, particularly if the proposed development meets the requirements to be exempt from forest conservation requirements. The Catherine F. Scott Commons, Pavilion Three, and Pavilion Four renovation projects have all been exempt from forest conservation requirements. City of Takoma Park tree replacement requirements will be addressed on a project by project basis depending on which trees are removed. Coordination efforts between M-NCPPC and the City of Takoma Park Arborist for forest conservation, tree protection and tree replacement requirements must be taken into account with future development of the east campus.

Sustainability and Smart Growth

The Facilities Master Plan for the Campus evokes Smart Growth philosophies of renovation of existing structures and, when not possible, intensification of development on existing parcels. The Campus remains compact and intensely developed. Parking is primarily located in two centralized garages and walkability is emphasized in the design of all buildings.

In addition, all new structures will strive to meet the LEED Silver rating for new construction and renovations. Strategies for increasing the sustainability of the new facilities include:

- Incorporating innovative waste water technologies;
- Reducing building water use through high-efficiency fixtures and collection/reuse of stormwater;
- Optimizing energy performance of buildings through cost effective energy efficient measures including on-site renewable energy, and high-efficiency lighting and HVAC systems;
- Connecting to existing high performance central plants for energy efficiency, demand management and economies of scale;
- Incorporating sustainable construction waste management;
- Building with materials with recycled content, manufactured regionally, and/or manufactured using renewable resources;
- Maintaining healthy environments through increased ventilation, thermal comfort and clean air; and
- Providing interior spaces with daylight.

Site based strategies for increasing the sustainability of the new facilities include:

- Creating density of structures leaving land for open space;
- Selection of appropriate native or adapted plant materials requiring minimal or no irrigation;
- Creating and maintaining habitats that promote biodiversity;
- Managing stormwater quality and quantity through green roof systems and rain gardens;
- Reducing the heat island effect by providing trees for shading paved surfaces and by using open grid or light-reflective material for hardscape;
- Creating cool roofs by using high-reflective roofing materials in conjunction with green roof systems; and
- Limiting light pollution with dark sky fixtures.

Currently, a majority of students arrive to the campus by mass transit or ride sharing. The College is committed to continuing to encourage alternative modes of transportation to the Campus, coordinating with County bus services, providing transit facilities on Campus, and providing students with education and incentives to reduce automobile usage.

2.6 IMPLEMENTATION

2.6.1 Projected Costs

An estimate of project costs for the design, construction and furnishing of the various projects included in the 2013-2023 Facilities Master Plan is illustrated below. See Table 2.17 TP/SS Cost Estimate Summary.

2.6.2 Project Sequencing

Project sequencing is identified in Figure 2.18 with building projects numbered according to their proposed sequence.

2.6.3 Land Use Plan 2023-33

This Facilities Master Plan proposes some strategies for managing growth on this campus beyond 2023. By the time the building projects represented on this plan have been completed, most, if not all of the developable parcels owned by the College will be developed with new buildings or substantially renovated. If the College is to grow either in student body or facilities, new off-campus sites will need to be acquired.

There remains one developable parcel in the west campus, adjacent to the Cultural Arts Center on Burlington Avenue. This site could be developed in the future and would make an ideal location for an academic building associated with the Arts or with Health Sciences. There are no vacant parcels owned by the College available for development on the east campus.

To knit the west and east campuses together, development of existing properties along Fenton Street and Burlington Avenue should be pursued. These sites include two self-storage facilities, an automobile repair shop and several former residential properties now used as car dealerships. Future campus uses for these sites would range from expansion of the East Garage to construction of a four or five story academic building. Development of these properties may allow for opportunities to span across the WMATA/CSX tracks with pedestrian bridges and/or academic structures. (See Figure 2.20 2023 to 2033 Land Use Plan). Other considerations include:

- Coordinate with Montgomery County regarding possible opportunities to develop facilities in Jesup Blair Park, in particular the proposed Health and Fitness Center described in Section 2.5.4;
- Increase safety along the pedestrian bridge. This could be accomplished by incorporating the pedestrian bridge into a new building that is largely transparent to the outside;
- Enhance the views from the Silver Spring side of campus toward the Takoma Park side of campus by creating a visual barrier to the WMATA/CSX tracks and storage facilities across the tracks;
- Activate the connection between the east and west campuses. If a College building such as a new Health and Fitness Center were located in the park, this type of facility could act as a well-lit, active space beacon that would facilitate a stronger connection and outreach to the Takoma Park and Silver Spring communities.

FIGURE 2.20 2023-2033 LAND USE PLAN

EXISTING BUILDING

POTENTIAL EXPANSION OPPORTUNITY

CF The Morris and Gwendolyn Cafritz Foundation Arts Center
CM Catherine F. Scott Commons
CU Cultural Arts Center
DC Child Care Center
EG East Garage (parking)
HC Health Sciences Center
P3 Pavilion Three
P4 Pavilion Four
ST Charlene R. Nunley Student Services Center
WG West Garage (parking)

1 MATH AND SCIENCE CENTER BUILDING

2 LIBRARY LEARNING COMMONS

3 MATH BUILDING

4 HEALTH AND FITNESS CENTER

PARKING GARAGE

5 PAVILION ONE AND PAVILION TWO

TABLE 2.17 TP/SS COST ESTIMATE SUMMARY

PROJECT DESCRIPTION	TYPE	EXISTING 2013 GSF	MASTER PLAN 2023 GSF	GSF CHANGE	TOTAL COST/GSF	TOTAL COST
1. MATH AND SCIENCE CENTER BUILDING	NEW	0	134,600	134,600	$447.25	**$60,199,967**
1a. FALCON HALL	DEMO	39,063	0	(39,063)	$15.00	**$585,945**
1b. SCIENCE SOUTH BUILDING	DEMO	23,757	0	(23,757)	$15.00	**$356,355**
2. LIBRARY LEARNING COMMONS	NEW	0	62,734	62,734	$398.35	**$24,990,371**
2a. MATHEMATICS PAVILION	DEMO	6,942	0	(6,942)	$15.00	**$104,130**
2b. NORTH PAVILION	DEMO	6,942	0	(6,942)	$15.00	**$104,130**
3. MATH BUILDING	NEW	0	45,600	45,600	$480.50	**$18,627,471**
3a. RESOURCE CENTER	DEMO	44,906	0	(44,906)	$15.00	**$673,590**
4. HEALTH AND FITNESS BUILDING	NEW	0	49,230	49,230	$412.05	**$20,285,222**
4a. SCIENCE NORTH BUILDING	DEMO	39,950	0	(39,950)	$15.00	**$599,250**
4b. PARKING STRUCTURE - BELOW GRADE	NEW	0	220 sp.	220 sp.	$301.19	**$8,855,000**
5. PAVILION ONE	RENO	7,385	7,385	0	$297.18	**$2,194,674**
5. PAVILION TWO	RENO	7,385	7,385	0	$297.18	**$2,194,674**
TOTAL						**$139,770,779**

FIGURE 2.21 2013-2023 AERIAL VIEW